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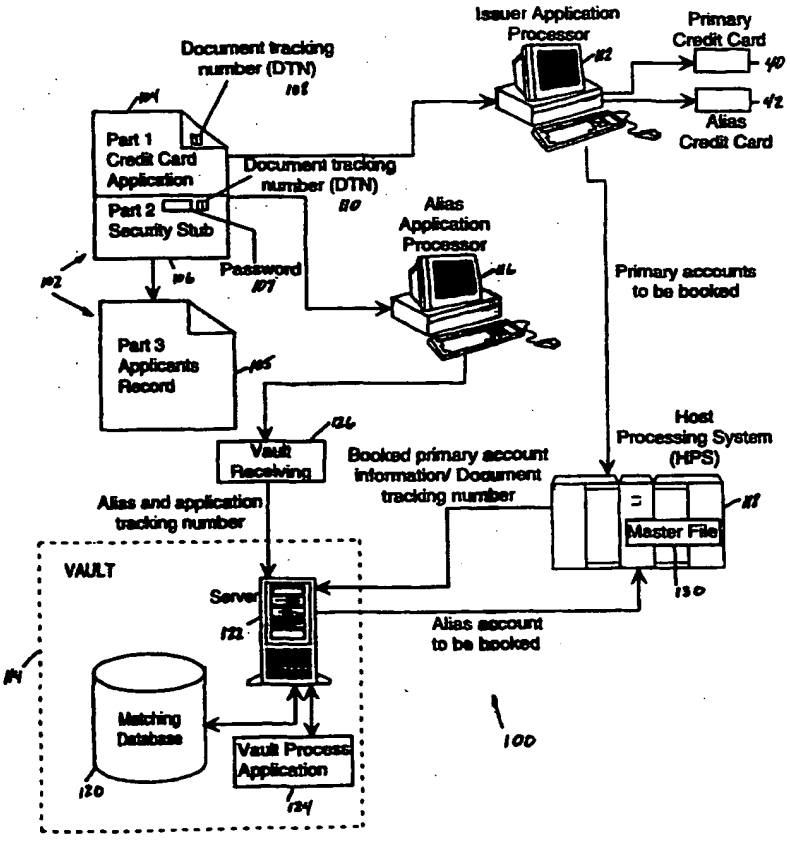
(54) Title: SYSTEMS AND METHODS FOR ANONYMOUS PAYMENT TRANSACTIONS



(57) Abstract: Systems and methods for managing credit card accounts on a credit card processing system to accomplishing anonymous payment transactions. The systems and methods provide an alias account for a credit cardholder on the credit card processing system that is associated with a first credit card and identifies the cardholder with an alias identity. The systems and methods also provide a primary account for the credit cardholder on the credit card processing system that is associated with a second credit card and identifies the cardholder with the cardholder's real identity. In addition, the systems and methods provide a secure database that creates a relationship between the alias account and the primary account to carry out the credit card processing functions associated with the alias account. The alias account processing functions are carried out with the cardholder's real identity known only to the secure database.

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SYSTEMS AND METHODS FOR ANONYMOUS PAYMENT TRANSACTIONS

BACKGROUND

In the past, cash was the preferred means for paying for goods and services. As our society has become more advanced, credit cards have replaced cash and have become an accepted way to pay for goods or services. In a credit card transaction, an issuer bank provides credit to a credit cardholder and a merchant accepts this credit as payment for the goods or service. Due to the ease of these transactions, cash is used less and less, and money transfers between parties are becoming purely electronic.

Because these transactions are electronic and computing and data storage has becomes less expensive, it has become easier to collect the information that an individual reveals when purchasing goods and services. For example, for each credit card transaction, an issuer bank's computer system can store the merchant's name, the product purchased, and the amount of the transaction. The issuer bank or credit card company can use the collected information to determine the spending habits of their credit cardholders and then either use that information in its own business or make it available to others.

In addition to the information stored in the issuer bank's computer system, as a consequence of a credit card transaction, the individual merchants receive information from the issuer bank about the credit cardholder. This information can be used to provide targeted marketing directed to the credit cardholder, or to provide others with information about the consumer's buying habits.

The consequences associated with the availability of an individual's spending information range from the merely annoying to the serious. At a minimum, an individual may receive more targeted junk mail than may be desired. More seriously, the same information

that is used to target the individual for junk mail can also be used to target the individual for private or governmental harassment. For example, an issuer bank may choose to sell its customer list, with indicia that identifies all credit cardholders that have purchased sporting equipment, to retail sporting good companies. These companies may then inundate a credit cardholder with mail or other forms of advertisements. In a more serious situation, the issuer bank may sell its list of customers that have purchased certain goods (for example, furs or steaks) to activist groups that oppose the purchase of such items. These groups may then use the customer list to expose the credit cardholder to all sorts of harassment and perhaps physical injury.

Accordingly, there is a need in the art for a method and system where credit cardholders are able to purchase services or goods in complete anonymity. With this anonymity, credit cardholders have the privacy to freely purchase any item without worrying about being personally harassed.

SUMMARY OF THE INVENTION

The present invention is directed to methods and systems for protecting the identity of a credit cardholder. The cardholder can enter into credit card transactions in complete anonymity. Since the cardholder's identity is protected, the cardholder has the freedom to purchase any goods or services without worrying about receiving unwanted mailings or being personally harassed.

Briefly described, the present invention allows the establishment of two credit cards with a line of credit that is split across two accounts—a primary account and an alia account. The primary account is a conventional credit card account constructed in a credit card processing system using the factual information provided by an applicant for a credit card. The primary account is the account used for reporting and investigating the applicant's credit worthiness and establishing credit.

The alias account is constructed using security information submitted by the credit card applicant, and information from an associated primary account. The alias account is constructed in a secure database and is identified with an alias name and address. The secure database is preferably maintained in a secure facility or vault operated by an independent third party, for example a privacy foundation that is not beholden to credit card companies or to merchants. The vault maintains the identity of the alias account holders; the identities are not disclosed to others except under certain limited conditions.

Once primary account is constructed in the credit card processing system, the primary account information is then transferred to the vault. The vault matches the transferred primary account information with the associated security information submitted by the applicant. As a result of matching the primary account and security information, an alias account is constructed in the vault. The vault then transfers the alias account information to the credit card processing system, for the credit card processing system to create a corresponding alias account.

The credit card associated with the primary account is used and the processed like any other credit card. The credit line for the primary account is established as some portion of the credit line approved during the application process. A remaining portion is assigned to the alias account.

The credit card associated with the alias account is also used like any other credit card, but a number of the credit card processing functions are handled in a different manner from other credit card accounts. The credit card transactions associated with the alias account are processed on the credit card processing system with the alias information (i.e., alias name and address). Therefore, the anonymity of the cardholder is maintained. When the real identity of the cardholder is required to support a credit card processing function, for example issuing the credit cardholder a statement for billing purposes, a mailing address is retrieved from the associated alias account in the vault and associated with the statement for the alias

account. For example, the alias account statement is transferred to the secured database or facility to have the real identity of the cardholder determined before the statement is mailed.

Accordingly, it is an object of the present invention to provide for payment transaction systems, and methods associated therewith, that allow payment transactions to anonymous on the part of account holders, so as to avoid undesirable compromises of privacy and anonymity on the part of consumers in their financial transactions.

These and other objects, features, and advantages of the present invention may be more clearly understood and appreciated from a review of the following detailed description and by reference to the appended drawings and claims.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

FIG. 1 is a block diagram illustrating an exemplary account setup in the alias account system of the present invention.

FIG. 2 is a block diagram illustrating a typical credit card transaction using the credit cards of the present invention.

FIG. 3 is a block diagram illustrating an upgrade of an existing account to an alias and primary account, in accordance with the present invention.

FIG. 4 is a general block diagram illustrating an embodiment of the alias account management process of the present invention.

FIG. 5 is a timing diagram illustrating an example of an issuer's credit exposure when a credit limit increase is processed using the account management process of FIG. 4.

FIG. 6 is a block diagram illustrating a process for performing non-mon updates, such as name and address changes, in the alias account system of the present invention.

FIG. 7 is a block diagram illustrating the account closing process in the alias account system of the present invention.

FIG. 8 is a block diagram illustrating an overview of the statement printing process of an embodiment of the present invention.

FIG. 9 is a general block diagram illustrating an embodiment of the alias statement process.

FIG. 10 is a block diagram illustrating the databases employed in the vault and their associated relationships.

FIG. 11 is a flow diagram illustrating an overview of the host and vault process flow in an embodiment of the present invention.

FIG. 12 is a flow diagram illustrating the account acquisition process of an embodiment of the present invention.

FIG. 13 is a flow diagram illustrating the account maintenance process in an embodiment of the present invention.

FIG. 14 is a flow diagram illustrating the collections process in an embodiment of the present invention.

FIG. 15 is a flow diagram illustrating the mail redirection process in an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The detailed description that follows is represented largely in terms of processes and symbolic representations of operations carried out by a credit card processing system. In the drawings that follow the detailed description, in which like numerals represent like elements throughout the several figures, aspects of the present invention are described in further detail.

ALIAS ACCOUNT SYSTEM

Account Setup

FIG. 1 illustrates an exemplary account setup in an alias account payment transaction system 100. The alias account system 100 comprises a three-part credit card application 102, an issuer application processor 112, a primary credit card 40 and an alias credit card 42, an alias application processor 116, a host processing system 118, a part 3 applicant record 105, a vault system 114, and a vault receiving element or gateway 126. The vault system 114 includes a server 122, a vault process application 124, and a matching database 120.

The three-part credit card application 102 comprises a part 1 credit card application 104 for setting up the primary account, a part 2 security application or stub 106 for setting up the alias account, and a part 3 applicant's record 105 that is retained by the applicant. The card applicant's real identity and factual information used to establish credit are provided on the part 1 credit card application 104. The card applicant's alias identity, for example, an alias name and alias address, are provided on the part 2 security stub 106. The only information in common between the part 1 credit card application 104 and the part 2 security stub 106 is a document tracking number (DTN) 108 and 110. In the preferred embodiment the DTN is the same multi-digit number on both part 1 and part 2. Alternatively, a multi-part encryption methodology (e.g. public key/private key) can be employed to provide two different DTNs on the parts 104, 106 that when combined according to an encryption/decryption algorithm establish a unique number for associating the primary account and the alias account under appropriate predetermined circumstances.

Generally, the alias account system 100 functions in the following manner. The part 1 credit card application 104 of credit card application 102 is transmitted to the issuer application processor 112 for processing. If the part 1 credit card application is approved, the primary credit card 40 is issued and a primary account is booked on host processing system (HPS) 118. The primary account is a credit card account that functions like any other credit card account.

The part 2 security stub 106 is transmitted to the alias application processor 116, independently of the part 1 credit card application. At the alias application processor 116, the part 2 security stub 106 is processed and the resulting information is transmitted to vault receiving 126. Vault receiving 126 transfers the information received from alias application processor 116 to the vault 114.

In accordance with a preferred aspect of the invention, the vault 114 is preferably a secure facility operated by an independent third party that is not beholden or obligated to credit card companies or merchants, for example a privacy foundation, where the identity of an alias account holder is maintained and not disclosed to others except under certain limited conditions. The vault may charge a fee for using its facilities, and may contract with credit card companies to provide its vault services, as described herein.

Although the preferred embodiment involves use of an independent secure facility as the vault, it will be appreciated that some degree of cardholder privacy can be realized by maintaining the alias account features described herein with a secure database within the data processing facilities of an issuer or other party. According to this alternative aspect of the invention, secure data may be provided by a secured computer system within an issuer's facility or by a separate secure database with an issuer's computer system for supporting the alias accounts. Cardholder privacy is effected in this alternative approach by password protecting the secure data, by restricting the access of customer service representatives to the secure data, and/or by providing separate personnel to handle the issuer's alias account database.

In vault 114, a vault process application 124 on server 122 receives information from vault receiving 126 and from the primary account booked on HPS 118. This information is input to a matching database 120 and is used to book an alias account in vault 114. The alias account information is then transferred to HPS 118 to set up a corresponding alias account and issue an alias credit card 42. The alias account booked on HPS 118 is identified with an alias name and address.

In the alias account system 100, the key points in protecting the anonymity of the account holder are the facts that the part 1 credit application 104 goes to a different location than the part 2 security stub 106, and that the only information in common between the two parts of credit card application 102 are the DTNs 108 and 110.

In FIG. 1, a new account is set up using the three-part credit application 102; information required from credit card applicants is provided on appropriate paper or computer based form. The part 1 credit card application 104 of application 102 is a standard credit application, while the separable part 2 security stub 106 is used to setup the alias account. A part 3 applicant's record 105 is also provided as an applicant's copy of the three-part credit card application 102.

The part 1 credit card application 104 captures the normal information the issuer requires to make its credit decision and setup the primary account. The part 1 credit card application also provides a document tracking number (DTN) 108 for creating an association with a second DTN 110 on the part 2 security stub 106. The DTN 108 is stored in a master file 130 when the application is processed so that it can be passed to the vault 114 after the account is booked.

The issuer processes the part 1 credit card application 104 as any other application. Credit bureau reports are requested and the account is scored to determine credit eligibility and establish an amount of available credit. If the part 1 credit card application 104 is not approved, the normal letters are sent as with any other credit application. If the application is approved, the primary account is booked on the host processing system (HPS) 118 and a primary credit card 40 is issued to the applicant. Under association regulations the address of the booked account is reported to the Issuers Clearing House (ICS) and the credit bureaus.

There are at least two methods of booking the approved primary accounts on the host processing system. If the credit card issuer uses HPS 118 to process the credit card application, the account is booked automatically on HPS 118. However, if a credit card issuer chooses to use an outside vendor to process the application, HPS 118

will receive an account tape and the accounts are booked as part of the nightly cycle. The nightly cycle also produces a daily report file. This report file shows all accounts that were booked on the system during that day. From this report file, the new primary accounts are captured and transferred to vault 114. HPS 118 may capture the primary accounts, for example, using a flag in the master file that denotes a primary account or using a portfolio segregation method, where the primary accounts are identified by the system and principal number (sys/prin number) in a method that will be familiar to those skilled in the art.

Unlike the part 1 credit card application 104, the part 2 security stub 106 is transmitted to the alias application processor 116. A data entry operator using alias application processor 116 captures the security information contained on the part 2 security stub 106. The security information, for example, may include the document tracking number (DTN) 110, a password 107, other security information, etc. The alias application processor 116 captures the security information and transfers it to vault receiving 126. Vault receiving 126 does not have to be physically located in the vault 114. It is simply a location where the security information is received and transferred to vault 114.

In vault 114, the security information from the part 2 security stub 106 is used to assign the password 107 to the alias account. The password 107 is used for identification (ID) verification on the alias account. The password 107 may be placed in the mother's maiden name field of the alias account. The part 2 security stub 106 contains a second DTN 110 that is associated with the DTN 108 on the part 1 credit application 104. Since the part 1 credit card application 104 and the part 2 security stub 106 have an associated document tracking number (DTN) 108 and 110, the DTNs are used to construct a relationship between the primary account and the alias account. Because they are used for this purpose, the document tracking numbers are preferably unique to an issuer.

In addition to providing the password 107 to the alias account, the security information is also input to vault process

application 124 on server 122. The vault process application 124 constructs a matching database 120 using two data sources. The first source is the security stub 106. The security stub 106 contains the password 107 and the DTN 110. The second source is HPS 118. HPS 118 transfers certain primary account information to the vault 114 for purposes of maintaining the alias account.

As new security information is transferred from vault receiving 126 to the vault 114, vault process application 124 receives the security information and updates the matching database 120. If, when the security information is received and processed and it is determined that the DTN 110 is already in the matching database 120, the vault process application 124 determines if the alias account information has already been posted by vault 114. If it has not, then, HPS 118 received the part 1 credit card application 104 before the security information arrived at vault 114. In this case, HPS 118 has already approved and booked the associated primary account and transferred its information to vault 114. To proceed with alias account establishment in this case, an alias account record is created and added to a new account file and is sent to HPS 118 for posting. This process creates the alias account on HPS 118.

If, when the security stub 106 is received and processed and it is determined that DTN 110 is already in matching database 120, the vault process application 124 determines that the alias account information is already posted and reports an error, because the security stub information is a duplicate record.

If, when the security stub 106 is received and processed and it is determined that DTN 110 is not already in the database, the primary account information has not been transmitted from HPS 118 to vault 114. In this case, the security stub information is maintained on file until it can be matched with a new primary account or for a predetermined holding time. For example, after 6 months the record may be removed from the file.

In the above process, the vault process application 124 is taking information from the daily cycle in HPS 118 and using it to create an input file for the next day's cycle. This means that, if an

account is approved before a day's cycle ends, the new account is built in HPS 118 and the information for the vault 114 is extracted from the files created that night, during the processing of the daily report file. The extracted information is transmitted to vault 114. This input to the vault is processed and a request for a new alias account file will be transferred back to HPS 118 for the next night's processing of the daily report file. As a result of this process, the new alias account is booked in HPS 118.

Once an alias account is booked on HPS 118, the alias accounts are not reported to the credit bureaus or the Issuers Clearing House (ICS). The alias account is not reported to the credit bureaus because the primary account was already reported. The alias account is not reported to ICS because the address on the account is meaningless. Furthermore, the credit available to the credit cardholder is split or allocated between the primary account and the alias account on a predetermined basis, with the total credit available to the credit cardholder not exceeding the sum of the primary account and the alias account.

In HPS 118, all alias accounts will be assigned a fictitious name to populate the fields within the alias account and facilitate identification and recognition of alias accounts within the HPS system. For example, the account name may be assigned a made up name such as "Pat G. Alias". The remaining account information for the alias account is generated in the vault 114. Vault 114 generates a mailing address for the account that consists of an apartment number that is unique and a city, state and zip code that is special for the account, again to facilitate identification and recognition of alias accounts within the HPS system. The zip code is used in the mailing process to identify a document with an alias name and address. The mailing process for alias accounts will be discussed later in detail.

The booked alias accounts are reported on the daily report file in the manner known to those skilled in the art. A file of these accounts is created and sent to the vault 114 so that a report can be created for the issuer and the privacy foundation. The vault 114 will provide daily reports showing the primary accounts that are

booked but have no matching part 2 security stub 106 and primary accounts that have successfully set up an alias account. The vault will also generate a weekly report to inform the issuer of the number of alias accounts issued and the number of account numbers available for assignment.

Account Transactions

FIG. 2 illustrates a typical credit card transaction using the credit cards of the present invention. Credit card 40 is associated with the primary account and credit card 42 is associated with the alias account. The primary and alias credit cards 40 and 42 are used like any other credit card. The cardholder presents either the credit card 40 or 42 to a merchant at a point of sale 204 or 206 (which can be in person, on line, via telephone, etc.). The merchant at the point sale submits the credit card account number for authorization to an acquirer. The acquirer is an entity that enters into an agreement with a merchant for authorization and settlement of its credit card transactions. The acquirer may be a bank, a credit card company (for example, VISA, AMERICAN EXPRESS, MASTERCARD, etc.), or some other entity.

In FIG. 2, the Host Processing System (HPS) 118, which may be operated by an acquirer or by another entity, receives the authorization request from the merchant and provides authorization of the credit card transaction. Assuming that the credit card transaction from either the primary credit card 40 or the alias credit card 42 is approved, the transaction is treated in a similar fashion to other credit card transactions, with the exception of the statement printing process. The statement printing process for the alias account is different from the printing process of the primary account and other credit card accounts. The primary account statement 218 associated with credit card 40 is printed in print facility 216, using the name and address associated with the primary account in HPS 118.

In contrast to the statement printing process for primary accounts, alias accounts are tagged in HPS 118 for purposes of identifying alias accounts and distinguishing them from other

accounts. The alias accounts are tagged, for example, by setting a flag, identifying special fields, or assigning a system and principal number (sys/prin. number) to the alias accounts. In accordance with the present invention, however, the alias accounts are not associated with any primary account at the HPS. The tagged records 212 are then transferred to vault 114 for processing. In vault 114, the fictitious name and address on the alias account is replaced with the cardholder's real name and address. The real name and address is retrieved from matching database 120. The corrected records 214 are transferred to print facility 216, where an alias account statement 220 is printed. The alias account statement printing process will be discussed in greater detail below.

Account Updates

Referring now to FIG. 3, an existing cardholder can upgrade or modify their credit card account to add an alias account. An upgrade or pre-approved application 300 is used to sign-up an existing cardholder for an alias account. The upgrade or pre-approved application 300 comprises two parts. Part 1 302 is an upgrade credit card application and part 2 304 is a security stub. According to this aspect of the invention, unlike new account setup, the two parts of application 300 need not be associated by using the DTN information. Instead, the two parts of the application may be associated by using the credit card account number 306 on the cardholder's existing credit card 301. The credit card account number 306 is affixed to both parts of the application. A password 303 selected by the cardholder is provided on the part 2 security stub for security purposes.

As illustrated in FIG. 3, the part 1 upgrade credit application 302 is transmitted to issuer application processor 112. The issuer or its agent will handle the processing of the part 1 upgrade credit application 302. Similarly, the part 2 security stub 304 is transmitted to vault receiving 126 for processing. Vault receiving 126 captures the password 303 and the current credit card account number 306 on part 2 security stub 304. This information is transferred to the server 122 to populate the table for matching database 120. The part 2

security stub 304 information is stored on server 122 for a predetermined period of time or until the corresponding account information is received from HPS 118 and an alias account is built.

When the upgrade credit card application 302 is approved, the issuer initiates an account transfer. The existing account is transferred to a primary account and a new upgrade credit card 308 is issued as the card for the alias account. The existing account may be transferred, for example, by flagging the existing account as a primary account in the master file or using a portfolio segregation method and switching the existing account to a system and principal number (sys/prin. number) assigned to primary accounts. The credit limit on the new primary account is also set to a value that can be distributed between the primary account and the alias account that will be created. The credit limit distribution process will be discussed in detail in the account management section.

HPS 118 captures the account transfers on a report file and checks the report file for existing accounts that have been identified as primary accounts. This report is used to transfer the primary accounts to the vault 114. When vault 114 receives the new primary account information and matches the credit card account number 306 on the part 2 security stub 304 with the credit card account number 306 on the primary account, it will create a new alias account. All other processes for creating the alias account are the same as those described in new account setup.

Account Management – Credit Limit Changes

Refer now to FIG. 4 for a discussion of the account management functions. In particular, the following discussion relates to the manner in which the credit limit assigned to a particular cardholder is increased (or decreased) and the changed credit limit is allocated between the primary account and the alias account.

Account management functions generally do not involve monetary values or relate to specific financial transactions, and are often called non-monetary or "non-mon" transactions. Generally, a non-mon transaction is a transaction that affects account information,

but does not affect the monetary information for an account. For example, name, address, and credit limit changes to an account are non-mon transaction, and such changes are generally called updates. In the alias account system 100, non-mon updates to the primary account are processed on HPS 118.

The primary account controls the credit line on both the primary and the alias accounts because all credit decisions are based on the primary account. When HPS 118 establishes a primary account, a credit limit is set for the primary account. This credit limit is passed to the vault 114 as part of the alias account setup process. When the vault 114 creates the alias account it will take the credit limit passed and divides it based on a percentage allocation or distribution ratio established by the issuer. A non-mon transaction is created to set the primary account's credit limit to its proper value. The alias account's credit limit is set to the remaining amount. In addition, there is information stored with the primary account recording the change to the credit limit, and the fact that the vault 114 issued the change. This information is important because a customer service representative (CSR) making a change to the credit limit can recognize that there is an alias account associated with the primary account.

It will be appreciated that the allocation of available credit between the primary account and the alias account is within the discretion of the issuer and, if desired, selection by the cardholder. An issuer may require a predetermined allocation, for example 50%, of the available credit between the two, or may allow some discretion on the part of the cardholder. The issuer may allocate 0% or 100% or any number in between of the available credit to the primary account, with the remainder to the alias account.

A CSR may retrieve the information stored with the primary account to help determine the combined credit exposure and make the decision to issue a non-mon setting a new credit limit. The vault 114 will capture the non-mon when it is reported on a daily report file and will recalculate both credit limits and issue a non-mon for each account. It will be understood that in current systems this

process may require a number of cycles to complete so there is additional exposure to the issuer from the time that the non-mon is issued until the vault 114 issues the non-mons for both accounts and they are processed by HPS 118. This process applies to both increases and decreases of the credit limit.

It is important to note that if the issuer changes the distribution ratio of the credit limit, vault 114 will not immediately recalculate the credit limit associated the alias accounts on file. The accounts will remain at the old ratio until a non-mon is issued for the account. This is to prevent the possibility of putting accounts over-limit that were not over-limit before the change. Online changes of the alias account's credit limit is preferably not allowed.

FIG. 4 is a general block diagram illustrating an embodiment of the alias account management process. The alias account management process starts at block 400 with a request from a cardholder for a credit line increase. This is usually made through a phone call to the issuer. The issuer receives the request at block 402 and requests a credit bureau report of the cardholder. Based on the credit bureau report, at block 402 the issuer re-scores the customer's credit and determines the customer's eligibility for a credit line increase.

If the credit increase is approved, the issuer at block 406 will perform an online non-mon transaction to HPS 118 to post the change of the primary account credit limit. The non-mon transaction is logged in an online non-mons file 408. The online non-mons file 408 is then transferred to the posting program 410. The nightly posting program 410 also receives the current host master file 412. Once both files are received, the posting program 410 posts the online non-mons in file 408 to the current master file 412 and generates a new host master file 414. The posting program 410 also generates a number of report files. These report files are input to a report splitter program 416 that will split off a non-mon report 418. The non-mon report 418 contains the primary and alias account information associated with the posted transactions that do not effect the account's monetary value.

The non-mon report file 418 is used as input to alias split program 422 and to generate a daily report 420. The alias split program 422 separates the alias and primary account transactions and generates a non-mon report file 424 that only includes the alias account transactions. This non-mon report file 424 is then transferred to vault 114.

In vault 114, the non-mon report 424 is input to the non-mon generator process 426. The non-mon generator process 426 retrieves the issuer's percentage allocation or distribution ratio from the matching database 120 and applies it to the new credit line limit received in non-mon report file 424. In applying the issuer percentage allocation, the non-mon generator process 426 takes the new credit line limit and apportions it based on the percentage assigned to the primary and alias account. To set the apportioned credit limits in HPS 118, the non-mon generator 426 outputs a non-mon file 428 to HPS 118. The non-mon file 428 is input to the posting program 410 in the next day's cycle. The posting program 410 will post the modified credit limits to the primary and alias accounts.

FIG. 5 is an example of an issuer's credit exposure when a credit limit increase is processed using the account management process of FIG. 4. In column 1 502, when the cardholder makes a request for the issuer to increase the primary account credit limit from $10,000 to $15,000, the issuer's total exposure is $10,000 prior to the credit limit increase. The $10,000 exposure is divided according to the issuer's percentage allocation, which in this example is 50%. Therefore, the issuer's exposure is $5,000 for the alias account and $5,000 for the primary account.

In column 2 504, when the issuer enters the online non-mon 506 for $15,000 to HPS 118, the change of the primary account credit limit is posted and the issuer's total exposure is increased to $20,000 ($15,000 for the primary account and $5,000 for the alias account). In column 3 508, during the first day's batch cycle (cycle 1 510), the issuer's exposure remains at $20,000.

In column 4 512, after HPS 118 completes the cycle 1 510, the credit limit increase is transferred to vault 114 for processing.

During the processing, the issuer's credit exposure remains at $20,000 ($15,000 for the primary account and $5,000 for the alias account). Once the processing is complete, in column 5 514, the modified alias and primary credit limits are transferred back to HPS 118 for input to the second day's batch cycle (cycle 2 516). At this point, the issuer's credit exposure is $15,000 ($7,500 for the alias account and $7,500 for the primary account).

Non-Mon Updates

FIG. 6 illustrates a process for performing non-mon updates such as name and address changes. Daily non-mon file 600 contains the records of the non-mon updates to the primary accounts. The daily non-file file 600 also includes tables of the sys/prin. number and non-mon values associated with a non-mon update. The sys/prin. number and non-mon values within the tables are easily modified.

The daily non-mon file 600 is stored and processed outside of the HPS's critical path. HPS 118 uses an extraction program 602 to read the daily non-mon file 600 and create a vault transaction file 604 that is later transferred to vault 114. The extraction program 602 selects the records that are added to the transaction file 604 using the record's sys/prin. number and non-mon values.

On a daily basis, vault transaction file 604 is transmitted to vault 114. The vault update process application 606, on the vault's server 122, takes the name and address changes from the vault transaction file 604 and posts them to the matching database 120. This ensures that the mailing labels have the correct mailing information. For changes that need to be propagated from the alias account in vault 114 to the associated primary account on HPS 118, a non-mon update file 608 is created and transferred to HPS 118 for the next day's processing cycle.

An application program on HPS 118 provides a report and input to vault 114 of all changes made to the HPS database and processing counts. The application program selects the report entries in a manner similar to the alias account extraction program 602. This

report will provide an audit trail of all transactions passed to vault 114.

As a safety precaution, HPS 118 is preferably configured to prevent a customer service representative (CSR) from making online changes to an alias account's name, address, social security number, and home and work phone number fields. These online changes to the alias account are blocked because those fields provide a means of compromising the cardholder's identity. To ensure that a cardholder's identity is not compromised and a CSR does not accidentally change these fields, the modification of these fields is assigned to vault 114.

Even though the issuer is prevented from making online name and address changes to the alias accounts, the issuer is able to make these modifications using tape transactions. However, this procedure should preferably be avoided to ensure that the cardholder's identity is not compromised.

It is always possible that the cardholder may want to close the alias or primary account. FIG. 7 illustrates the account closing process. In addition to name and address changes, account closings and personal identification numbers (PINs) associated with ATM transactions are also considered non-mon changes. The account closing process starts at step 700. At step 700, HPS 118 transfers the non-mon collection transactions file to the vault processing step 702. The non-mon collection transaction file contains the primary and alias accounts that are going into collections. In step 702, the vault 114 receives the non-mon collection transactions file and proceeds to step 704. At step 704, the vault 114 processes the collection transactions file and combines the two accounts. The accounts are combined, because the cardholder is charged an annual fee for the alias account that is charged on the primary account, and the issuer is paying for two accounts on HPS 118. The combined account is then transferred, at step 706, to a non-alias sys/prin. number on HPS 118. Once the accounts are combined, all activity on the alias account is visible on HPS 118. In the preferred embodiment, regardless of whether the

alias or primary account is closed, the account closing process remains the same.

Vault 114 also handles the non-mon for setting account PINs. If the issuer wishes to allow ATM use of the alias account, the form for selection of a PIN is inserted with a mailing to the cardholder. The mailing process will be described in detail below.

Account Risk Management

In the preferred embodiment, HPS 118 uses a standard credit card authorization system. However, the issuer must establish a method for authenticating the cardholder of an alias account. In an embodiment of the invention, this is accomplished by using the alias "password" that was entered during account setup. The issuer should also have some special procedures to handle referrals and hot calls. Since none of the information on the alias account is real, a phone number is set in the phone number field that will allow the issuer to communicate with the vault and request contact with the cardholder.

In reporting a lost or stolen credit card or to confirm fraud, a cardholder must make a call to report each account. This allows the cardholder to maintain his or her anonymity. A first call is made to report the primary account as themselves and a second call is made to report the alias account with the alias name. For example, the caller may use the name "Pat G. Alias." If the issuer suspects fraudulent use of the alias account, the issuer must contact vault 114. Vault 114 will in turn contact the alias account holder.

Once a credit card is confirmed as lost or stolen or fraudulently used, HPS 118 handles both accounts in the same manner. The account status flag is changed and an instruction is executed to transfer activity to a new account. HPS 118 also issues a new plastic credit card. The instruction generated by HPS 118 is captured from a report file and used to update the matching database 120 in vault 114. Vault 114 monitors the account status flag to generate the appropriate actions. Vault 114 also maintains state images of the accounts to monitor multi-step processes, and

determines when a process is complete. Vault 114 provides account reports on completed operations.

Unlike the procedure described above, when an alias account or primary account becomes delinquent, the vault will receive notification to combine the two accounts for reporting and/or collection purposes. The customer account disclosures, provided to the customer on account setup to advise of account policies and procedures, inform the cardholders that if the alias or primary account becomes delinquent the alias account will be closed and combined with the primary account. The primary account will be transferred to a non-alias sys/prin. number because it is no longer an alias account. The resulting new account is, then, placed into collections.

Customer Communications

In order to bill customers for credit card transactions, the HPS 118 produces on line alias account statements from archives and CD-ROM's. All statements produced on line will contain the alias account address information. Statements printed for the alias accounts proceed through the HPS statement processing until they are ready for printing. Monthly statements for the alias accounts are treated as if the issuer or some other vendor is going to print them.

FIG. 8 is an overview of the statement printing process 800, while FIG. 9 illustrates a specific implementation of an alias statement process 900. In FIG. 8, a statement formatting process or program module 801 at the HPS 118 produces an alias statement print file 802 of the alias account statement addresses. The alias statement print file 802 is transmitted to vault 114 for processing. Vault 114 is not responsible for mail redirection. However, in accordance with the invention vault 114 supports mail redirection. It will be recalled that to support mail redirection, vault 114 maintains the matching database 120. In the vault 114, the matching database 120 is queried based on the apartment number of the alias address to located the real name and address of the account holder.

The matching database 120 includes the alias apartment number (key), the real name, and the real address. If the apartment

number on the alias account statement is successfully located in the matching database 120, the real name and address that will be used for mailing the statement will be retrieved and used to construct a corrected alias statement print file 806. The corrected alias statement print file 806 is then transmitted to a print facility 808 outside the vault 114 that prints the monthly alias account statement 220 with the name and address provided by the cardholder to which the alias statement is to be mailed. Print facility 808 is any facility that can receive an electronic print file and print the monthly alias account statement 220.

In addition to the above mailing requirements, it is also necessary for the vault 114 to replace the alias name and address on the payment coupon with the real name and address for the alias account statement. This will help limit compromising the identity of the cardholder.

In another embodiment of the invention, the security stub 106 (FIG. 1) is provided with an option for an alternate address for mailing the alias account statements. In this case, HPS 118 flags the alias accounts that have an alternate address and transfers them to the alias statement print file 802. The alias statement print file 802 is then transmitted to vault 114 for processing. The vault 114 receives the alias statement print file 802, recognizes the flagged alias accounts, and does not replace the alias address with the real address associated with the primary account, but assigns the alternate address received with the security stub information.

In a further embodiment of the invention, a copy of the matching database 120 is made available to the print facility 808 or a secured site on the Internet that makes the database available to mail distributors that need the information for re-labeling. For example, a mail or parcel distributor working in association with the alias account system described herein may be operative to receive purchases made using an alias card, relabel the packages containing the purchases with the primary account address, and reship the packages to the primary account address. As another example, a mail or parcel distributor may

effect the same package relabeling to the alternate address instead of the primary account address.

In a system utilizing a mail or parcel distributor, items of mail or parcels addressed to the alias address are received by a predetermined mail distributor that has been established for mail and parcel relabeling and reshipping. It will be appreciated that the alias address should preferably contain indicia (e.g. a data key) that enables the mail distributor to determine the proper real shipping address for each received piece of mail or parcel. For example, all mail or parcels shipped to "Apartment XXXXX, River Street, Des Moines, Iowa", might indicate a mail distributor's facility in Des Moines, Iowa. The "XXXXX" can be a special key unique to a particular alias account cardholder. Upon receipt of a piece of mail or parcel with a certain apartment number, the mail or parcel distributor uses the apartment number key to look up the appropriate relabeling address in the matching database, and prints a new label for reshipping the mail or parcel.

It will be appreciated that the address displayed in the envelope of a received piece of mail or on the label of a received parcel must be sufficient to signal special processing, as well as locate the correct name and address. The alias address, however, is preferably not a post office box, since some merchants will not ship to such an address.

As a signal to mail distributors that a mailed item requires special processing, the alias address may contain a special zip code. The zip code provides a means for mail distributors to determine that the piece of mail needs to be re-labeled as part of their normal address scanning process. The zip code may also identify the facility that is assigned to handle the re-labeling process.

With this embodiment of the present invention, the alias account holder can direct merchants to ship merchandise purchased with the alias card to the print facility 808 or the mail or parcel distributor for re-labeling. This provides the alias cardholder with additional privacy. The alias cardholder is able to keep his or her

anonymity, since there is no need to provide the merchant with a mailing address where the cardholder can be reached.

In HPS 118, other customer communications (letters, alias credit card, and PIN mailings) are mailed using the master file address that is associated with the alias account. As described above, vault 114 maintains a matching database 120 that is used to create mailing labels. The matching database 120 uses the apartment number of the alias address or the alias account number as the key to retrieving the real name and address. The real information is used to produce a new mailing label to place over the alias address. However, since this is an expensive process, the issuer may want to turn off most letters to avoid the additional postage and handling costs.

FIG. 9 illustrates the preferred embodiment of the alias statement process 900. To start the alias statement process, a valid transactions file 901, a current host cardholder file 902, and a product control file 903 are input to a posting program 410 (FIG. 4). The posting program 410 outputs a new host cardholder master file 904 and transfers the statement records 905 to a statement formatting program 801. In the statement formatting program 801, the alias account statements are separated into an alias statement print file 802 and transferred to vault 114. All other accounts are output to a nightly statement file 908 that is transmitted to a print facility 808 which includes host output services 916 and statement printer 918. At output services, the statements are produced on statement printer 918.

In vault 114, the alias statement print file 802 is input to the statement name/address overlay process 912. The statement name/address overlay process 912 uses the matching database 120 to retrieve the real names and addresses associated with the alias accounts. Once the real names and addresses are retrieved, the overlay process 912 replaces the names and addresses on the alias accounts in the alias statement file 802, with the real name and addresses and transfers them to a corrected alias statement print file 806. The corrected alias statement print file 806 is then transferred back to HSP 118 as an input to the print facility 808. At output

services 916, the alias statements are produced on statement printer 918.

Remittance Processing

Primary account payments are handled in the same manner as any other credit payment. The primary account may use any options of payment the issuer wishes to make available. Unlike the primary account, however, there are some special considerations for handling the alias accounts. To handle the alias accounts, the issuer should preferably select a remittance processor. The remittance processor should preferably not use automatic payment options with alias accounts. The automatic payment options provide a means for the remittance processor to automatically charge a cardholder's checking account for the required payment. However, this requires that the cardholder's checking account number be stored on the HPS master file. Using this information, the alias and primary accounts can be matched and anonymity compromised.

In processing check payments for the alias account, the payment coupon for the alias account will have the cardholder's real name and address that will match their personal check. The payment coupon will also have the alias account number. However, the remittance processor does not have access to HPS 118, and additional information about the cardholder. Thus, the auto payment option and check payment processing provide a small risk that the cardholder's identity may be compromised at the remittance processor.

Vault Database

FIG. 10 illustrates the databases 900 employed in the vault 114 and their associated relationships. The vault databases comprise a matching database 120 (FIG. 1), a temporary database 1002, an account block database 1004, an issuer database 1006, and a mail redirection database 1008. The matching database 120 contains the alias and primary account information for matching the name and address of the alias account on HPS 118 with the real name and address of the cardholder. The matching database 120 contains a

number of fields for managing the alias account. FIG. 10 lists the fields contained in the matching database 120, and Table 1, below, provides a summary of some attributes associated with each of the listed fields for databases constructed in accordance with the invention.

For example, the first row of Table 1 summarizes the field "IsNew." The columns of row one include the following: column one identifies the field no. assigned to the "IsNew" field; column two lists the field name; column three identifies the data type associated with the "IsNew" field; and column four gives a description of the function of the field within the matching database.

Table 1. Summary of the fields contained in the matching database.

Field. No.	Field Name	Data type	Description
1.	PrimaryAccount Number	Alpha Numeric	This field will contain the account number for any primary account that has an alias account.
2.	AliasAccount Number	Alpha Numeric	This field will contain the account number for the alias account for the given primary account number.
3.	BoxNumber	Numeric	This field will contain the alias box number for its alias account. This number will be generated by a special algorithm.
4.	PrimaryActiviation Flag	Boolean	This flag if set, indicates that the primary account is active and if reset, indicates that it is not.
5.	AliasActiviation Flag	Boolean	This flag if set, indicates that the alias account is active and if reset, indicates that it is not.
6.	ProcessingRequired Flag	Boolean	This flag if set, indicates that a non-mon has been generated for this account. Hence it need not be considered again for sending to the host in the next cycle.
7.	LastUpdateDate	Date AndTime Stamp	This field indicates the date and time of the last update done on this account.

8.	PrimaryCreditLine	Numeric	This field will contain the current value of the maximum available credit for the primary account.
9.	AliasCreditLine	Numeric	This field will contain the current value of the maximum available credit for the alias account.
10.	IssuerCode	Alpha Numeric	This field will contain the issuer code for the cardholder.
11.	StartDate	Date Stamp	This field will contain the date on which the alias account was created.
12.	EndDate	Date Stamp	This field will contain the date on which the alias account was terminated.

The temporary database 1002 contains the alias and primary account information for creating the alias account in vault 114. FIG. 10 lists the fields used to create the alias account, and Table 2, below, provides a summary of some attributes associated with each of the listed fields.

For example, the first row of Table 2 summarizes the field "PrimaryAccountNumber." The columns of row one include the following: column one identifies the field no. assigned to the "PrimaryAccountNumber" field; column two lists the field name; column three identifies the data type associated with the "PrimaryAccountNumber" field; and column four gives a description of the function of the field within the Temporary database.

Table 2. Summary of the fields contained in the temporary database.

Field. No.	Field Name	Data type	Description
1.	DocumentTracking Number	Boolean	This field will decide if the alias account to be created is for a new or an existing primary account.
2.	IsNewAccountFlag	AlphaNumeric	This field will contain the document tracking number for a new primary account for which an alias account has to be created.
3.	AliasName	AlphaNumeric	This field will contain the alias name for the alias account. The name will be selected from the available names' list.
4.	AliasAddress	AlphaNumeric	This field will contain the alias address for its alias account. It will be generated by a special algorithm.
5.	PrimaryAccount Number	AlphaNumeric	This field will contain the account number for any primary account for which a alias account has to be created.
6.	RealName	AlphaNumeric	This field will contain the real name for its primary account.

7.	RealAddress	AlphaNumeric	This field will contain the real address for its primary account.
8.	IssuerName	AlphaNumeric	This field will contain the issuer code for the cardholder.
9.	IsAccountCreated Flag	Boolean	This flag if true, will indicate that the alias account has been created.

The account block database 1004 contains the issuer's account number information. This information is used to assign the issuer's account numbers to the alias accounts. FIG. 10 lists the fields use to define the issuer's alias account numbers, and Table 3, below, provides a summary of some attributes associated with each of the listed fields.

For example, the first row of Table 3 summarizes the field "IssuerCode." The columns of row one include the following: column one identifies the field no. assigned to the "IssuerCode" field; column two lists the field name; column three identifies the data type associated with the "IssuerCode" field; and column four gives a description of the function of the field within the Issuer database.

Table 3. Summarized the fields contained in the account block database.

Sr. No.	Field Name	Data type	Description
1.	IssuerCode	AlphaNumeric	This field will contain the issuer code.
2.	IssuerName	Alpha	This field will contain the issuer name.
3.	StartBlock	Numeric	This field will contain the start of the account block for the current Issuer.

4.	EndBlock	Numeric	This field will contain the end of the account block for the current Issuer.
5.	LastAccount Number	Numeric	This field will contain the last account number used for the current Issuer.

The issuer database 1006 contains the issuer profile within vault 114. The issuer profile includes the issuer's system code, the date the issuer become active on the system, and the credit limit information associated with the issuer's accounts. FIG. 10 lists the fields use to define the profile, and Table 4, below, provides a summary of some attributes associated with each of the listed fields.

For example, the first row of Table 4 summarizes the field named "IssuerCode." The columns of row one include the following: column one identifies the field no. assigned to the "IssuerCode" field; column two lists the field name; column three identifies the data type associated with the "IssuerCode" field; and column four gives a description of the function of the field within the Issuer database.

Table 4. Summarizes the fields in the issuer database.

Sr. No.	Field Name	Data type	Description
1.	IssuerCode	AlphaNumeric	This field will contain the issuer code.
2.	PrimaryCreditProportion	Numeric	This field will store the percentage of the primary credit line of a cardholder.
3.	Alias CreditProportion	Numeric	This field will store the percentage of the alias credit line of a cardholder.

4.	ActiveDate	DateStamp	This filed will indicate the date from which the change of Credit line has to come in effect.

The mail redirection database 1008 contains the alias and primary account for replacing the name and address on the alias account with the cardholder's real name and address. This is the address to which the cardholder's correspondences will be mailed. FIG. 10 lists the fields used to retrieve the cardholder's real name and address and Table 5, below, provides a summary of some attributes associated with each of the listed fields.

For example, the first row of Table 5 summarizes the field "aliasBoxNumber." The columns of row one include the following: column one identifies the field no. assigned to the "aliasBoxNumber" field; column two lists the field name; column three identifies the data type associated with the "aliasBoxNumber" field; and column four gives a description of the function of the field within the Mail Redirection database.

Table 5. Summary of the fields contained in the mail redirection database.

Sr. No.	Field Name	Data type	Description
1.	AliasBoxNumber	Numeric	This field will contain the alias box number for its alias account. This number will be generated by a special algorithm.
2.	RealName	AlphaNumeric	This field will contain the primary account number for the alias account.

3.	RealAddress	AlphaNumeric	This field will contain the real name for its primary account.
4.	PrimaryAccount Number	AlphaNumeric	This field will contain the real address for its primary account.
5.	AliasName	AlphaNumeric	This field will contain the alias name for the current alias account.
6.	AliasAddress	AlphaNumeric	This field will contain the alias address for its alias account.

ALIAS ACCOUNT PROCESSING

Overview of Host and Vault Process Flow

FIG. 11 is a flow diagram illustrating an overview of the host and vault process flow 1100. To initiate the primary account setup process, the issuer inputs part 1 credit card application 104 to the issuer application processor 112. After the issuer processes the part 1 credit card application 104, the issuer transfers the part 1 application data file 1118 to HPS 118. The part 1 application data file 1118 provides HPS 118 with a document tracking number (DTN) 108 and the necessary information to setup a primary account.

The part 2 security stub 106 is input to the issuer's alias application processor 116 to set up an alias account. After the part 2 security stub 106 is processed, the alias application processor 116 transfers the part 2 application data file 1102 to vault receiving 126. The part 2 application data file 1102 is used to assign a password 107 and a DTN 110 that matches the DTN 108 on the part 1 credit card application 104. Alias application processor 116 also transfers the issuer account blocks data 1104 and issuer distribution ratio 1106 to vault receiving 126.

Vault receiving 126, in turn, transfers the above information to vault 114 via alias account information 1110, account block details 1112, credit line ratio details 1114, and alias account

modification/termination details file 1116. Vault 114 stores the part 2 application data file 1102 in temporary database 1006. Vault 114 uses the issuer account block data 1104 to assign the alias account number, and the issuer distribution ratio 1106 to split the credit limit assigned to the primary account with the alias account. Vault 114 also adds a record to the matching database 120. Matching database 120 stores information such as the primary and alias account numbers. Once the alias account information is stored in vault 114, it issues a non-mon transaction via non-mons file 1124 to HPS 118 to requests the part 1 application data file 1118. This information is transferred from HPS 118 to the vault 114 via the primary account acquisition and updating file 1130.

Once vault 114 receives the primary account information, it queries the temporary database 1006 for the associated alias account. The temporary database 1006 is queried using the document tracking numbers (DTN) 108 and 110. The alias account found and the primary account are associated in matching database 1002. Vault 114 also transfers a non mon transaction via non-mon file 1124 to HPS 118. The non-mon is transferred with the alias account acquisition and updating file 1128 to request the creation of the alias account on HPS 118. As a result of this process, two accounts exist on HPS 118. The primary account with the cardholder's real name and address and an alias account with an alias name and address.

To maintain the two accounts HPS 118 transfers various files to vault 114. HPS 118 transfers a primary accounts acquisition and updating file 1130, a non-mons transaction updating file 1132, alias account update file 1134, collections account number file 1136, and an alias document file 1138. The primary accounts acquisition and updating file 1130 is used to update primary account information. For example, the primary account acquisition and updating file 1130 may contain an update for the cardholder's name, address, or account credit limit. The non-mons transaction file 1132 contains the non-monetary instructions to direct vault 114 to execute various functions. For example, the non-mons transaction file may include instructions to

flag the alias account for collections, to update the alias account details, or update the alias account credit line.

The alias account update file 1134 provides vault 114 with information to update the alias account. For example, the alias account update file 1134 may contain the information to change the credit limit on the alias account. The collections account number file 1136 contains the alias and primary account numbers that are going into collections on HPS 118. The alias document file 1138 transfers documents with an alias address and name to the vault 114 to have the alias name and address replaced with the cardholder's real name and address.

In response to the files and instructions transferred from HPS 118, vault 114 manipulates the primary and alias account information stored in the vault databases. This information is fed back to HPS 118 via alias account acquisition and updating file 1128, account collections file 1126, non-mon transaction file 1124, and redirected mail file 1122. The alias account acquisition file and updating file 1128 provides HPS 118 with the credit limit information for the alias and primary account. The account collections file 1126 provides HPS 118 with the information to combine the primary and alias accounts before sending them to collections. The non-mon transaction file 1124 serves a similar function as the non-mon transaction updating file 1132. The redirected mail file 1122 provides HPS 118 with documents that have had the alias names and addresses replaced with the cardholder's real name and address.

If at any time the cardholder decides to modify or terminate the alias account, the card holder may enter a request via the issuer application processor 112. The issuer application processor 112 transfers alias account termination/modification request 1108 to vault receiving 126. Vault receiving 126 transfers the request to the vault 114 via alias account modification/termination details file 1116. In vault 114, the request is processed and the appropriate outputs are sent to HPS 118.

Account Acquisition Process

FIG. 12 illustrates the account acquisition process 1200. Account acquisition begins at data entry step 1202. The issuer application processor 112 and alias application processor 116 execute data entry step 1202. Once issuer application processor 112 completes data entry step 1202, the part 1 application data file 1118 is transmitted to the host processing system (HPS) 118. HPS 118 at decision block 1204 determines whether an account already exists. If an account already exists, the process proceeds to step 1212, where HPS 118 puts the DTN in the master file and flags it as a primary account. Once the existing account has been converted to a primary account, the credit line of the existing account is altered at step 1214. Then, the process proceeds from step 1214 to step 1208. At step 1208, the primary account is dumped into a file. From step 1208, the file is transferred to step 1210. At step 1210, the file, identified as the primary account acquisition and updating file, is transferred to vault 114 for processing.

If at decision block 1204 HPS 118 determines that an account does not exist, the process proceeds to step 1206. At step 1206, a new account is created in HPS 118. The new primary account is created following the normal process flow of HPS 118. From step 1206, the primary account is transferred to step 1208. At step 1208, the primary account is dumped into a file. Next, the process proceeds from step 1208 to step 1210, where the file, identified as the primary account acquisition and updating file, is transferred to vault 114 for processing.

Once alias application processor 116 completes data entry 1202, the part 2 application data file 1102 is transmitted to vault receiving 126. Vault receiving 126 receives the part 2 application data file 1102 and at step 1216 generates an alias account number. From step 1216, the process proceeds to step 1218, where vault receiving 126 also uses the part 2 application data file 1102 to generate an alias file 1220. The alias file is transferred from step 1218 to step 1220. At step 1220, the alias file is transferred to vault 114 for processing.

Next, at step 1222, vault 114 receives the data from the alias file and puts it in a temporary database 1002. From step 1222, the process proceeds to decision block 1226. At decision block 1226, vault 114 determines if part 1 of the application if available. If part 1 of the application is not available, the proceeds to step 1230. At step 1230, vault 114 transmits a non-mon to request the part 1 application details. If part 1 of the application is available, the process proceeds to decision block 1228. At decision block 1228, vault 114 determines whether part 2 of the application is available. If decision block 1228 determines that part 2 is not available, vault 114 remains at step 1228 until part 2 of the application becomes available. However, if at decision block 1228 vault 114 determines that part 2 of the application is available, the process proceeds to step 1234. At step 1234, the vault 114 will match the DTN on the alias account with the primary account number, stored in two files, and add relevant entries to the matching database 120 (FIG. 1) and mail redirection database 1008 (FIG. 10).

Once the vault 114 has matched the primary and alias account at step 1234, the process proceeds to step 1240. At step 1240, vault 114 generates an alias account file. Next, the alias account file is transferred from step 1240 to step 1242. At step 1242, the alias account file, identified as the alias account acquisition and updating file, is transferred to step 1244. At step 1214, the alias account acquisition and updating file is input to the next day's cycle on HPS 118.

Account Maintenance Process

FIG. 13 illustrates the account maintenance process 1300. Account maintenance process 1300 is used to change and maintain the primary and alias account information. To initiate a change of name, address or credit line on an account, a request is made at step 1302 and transferred to the host processing system (HPS) 118. The request is then transferred to step 1304. At step 1304, HPS 118 will update, in the normal process flow, the associated account information in the host area. From step 1304, the process proceeds to step 1306. At step 1306, HPS 118 will select, in its nightly cycle, the accounts associated

with the alias account system. Once those accounts are selected, the process proceeds to step 1308. At step 1308, the changes are put into a file. From step 1308, the file is transferred to step 1310. At step 1310, the file, identified as the account update file, is transferred to vault 114.

At decision block 1312, vault 114 determines if any alias account update information has been received from the host. If there is no update information received from the host, the process proceeds to step 1302 and waits for the next request. If at step 1312 vault 114 determines that HPS 118 has transferred update information, the process proceeds to step 1314. At step 1314, vault 114 reads the account update file and makes the corresponding changes in the mail redirection database 1008 (FIG. 10).

Once step 1314 is complete, the process proceeds to decision block 1318. At decision block 1318, vault 114 determines if there have been alias account updates from a system operator. If a system operator has made changes to alias accounts, the process proceeds to step 1320. At step 1320, vault 114 creates a non-mon to update the alias details in the host (for a further discussion of non-mon transactions refer to FIGS. 4, 6, and 7). At this point, the process returns to step 1302 and waits for a new request (change of name, address and/or credit limit).

If at decision block 1318, the vault 114 determines that an operator has made no changes to an alias account, the process proceeds to decision block 1322. At decision block 1322, vault 114 will determine if there has been a request for a primary account credit line update. If at decision block 1322, vault 114 determines that there is no request for a primary account credit line update, then the process proceeds to step 1326 and ends. However, if at decision block 1322, vault 114 determines that there is a request for a primary account credit line update, then the process proceeds to step 1324. At step 1334, vault 114 creates a non-mon to update the alias account's credit line on the host. At this point, the process returns to step 1302 and waits for a new request (change of name, address and/or credit limit).

Collections Process

FIG. 14 illustrates a collections process 1400. The collections process 1400 identifies the alias and/or primary accounts that are delinquent and going into collections on HPS 118, combines them in vault 114, and sends them to collections. The collections process 1400 begins at step 1402, where HPS 118 selects the accounts for collection. The process then proceeds to step 1404, where HPS 118 places the selected accounts in a special queue. From step 1404, the selected accounts are transferred to step 1406. At step 1406, HPS 118 transfers the account numbers of the selected accounts into a file. From step 1406, the process proceeds to step 1407. At step 1407, the file, identified as a collections account number file, is transferred to the vault 114.

At step 1408, the vault 114 receives the account numbers transferred from step 1407. From step 1408, the account numbers are transferred to decision block 1412. At decision block 1412, the vault 114 determines whether the account sent for collection is a primary account. If the account sent for collection is determined to be a primary account, the process proceeds from decision block 1412 to step 1414. In step 1414, vault 114 will retrieve the alias account number from the matching database 120. Next, the process proceeds from step 1414 to step 1416, where the alias and primary account numbers are put into a file. From step 1416, the alias and primary account numbers are transferred to step 1421. At step 1421, the file, identified as the account collections file, is transferred to step 1422. At step 1422, HPS 118 receives the file containing the alias/primary account numbers and puts them into a working queue.

If decision block 1412 determines that the account sent for collection was not a primary account, the process proceeds to step 1420. Similarly, from step 1416, the alias and primary account numbers are also transferred to step 1420. At step 1420, the alias and primary account numbers are also used to create non-mons for combining the two accounts and terminating the alias account. From step 1420, the non-mons are transferred to step 1424. At step 1424, the file containing non-mons is transferred back to HPS 118. At step

1426, the HPS 118 receives the file containing the non-mons transferred in step 1424. Next, the process proceeds to step 1428. At step 1428, HPS 118 updates the master file and sends an account transfer confirmation 1428 back to vault 114. When the vault 114 receives the confirmation 1428 at step 1410, vault 114, sets the deactivation flag in the matching database 120 for the primary and alias accounts.

Mail Redirection Process

FIG. 15 is a flow chart illustrating a mail redirection process 1500. The mail redirection process 1500 is used to replace the alias name and address with the cardholder's real name and address on documents sent to the cardholder. Mail redirection process 1500 begins at step 1502, where HPS 118 will generate a mailing document. Next, the process proceeds to step 1504, where the host processing system (HPS) 118 will select the alias account documents and put them in a file. From step 1504, the process proceeds to step 1503. At step 1503, the file, identified as an alias document file, is transferred to vault 114.

Vault 114, at step 1506, receives the file transferred from step 1503. At step 1506, the vault 114, using the box number on the alias address and the primary account number, determine the real name and address from the mail redirection and matching databases 1008 and 120. Then, the process proceeds to step 1512. In step 1512, the vault 114 replaces the alias name and address with the real name and address on the document and placed them into a file. From step 1512, the file, identified as a redirected mail file, is transferred in step 1513 to HPS 118. The file transferred in step 1513 is received by HPS 118 in step 1514. In step 1514, HPS 118 receives the corrected mail and sends it to the printing system.

Based on the above description, alternative embodiments will be apparent to those skilled in the art to which the present invention pertains without departing from its spirit and scope. Accordingly, the scope of the present invention is described by the appended claims and is supported by the foregoing description.

What is claimed is:

1. A method for a credit card processing system to manage accounts in order to accomplish an anonymous credit card transaction, comprising the steps of:

providing an alias account for a credit cardholder on the credit card processing system that is associated with a first credit card and identifies the cardholder with an alias identity;

providing a primary account for the credit cardholder on the credit card processing system that is associated with a second credit card and identifies the cardholder with the cardholder's real identity; and

providing a secure database to create a relationship between the alias account and the primary account to carry out the credit card processing functions.

2. The method of Claim 1, further comprising the steps of:

creating the relationship between the alias and primary account by constructing a database that associates a second primary account and a second alias account stored in the secure database.

3. The method of Claim 2, further comprising the steps of:

constructing a first database that contains information for setting up the second alias account in the secure database;

constructing a second database containing information for assigning an account number to the second alias account setup from information in the first database;

constructing a third database containing information to create a profile for an issuer that is assigned to the second alias account constructed from the first database; and

constructing a fourth database that contains information for matching the second alias account created from the first database and a second primary account that corresponds to the primary account on the card processing system;

constructing a fifth database containing alias and primary account information for replacing the alias identity with the cardholder's real identity retrieved from the second primary account.

4. A computer-readable medium containing instructions that, when executed on a computer, perform the method of Claim 3.

5. The method of Claim 1, further comprising the steps of:

receiving a security stub from an applicant and using the security stub to setup an alias account in the secure database that corresponds to a second alias account in the credit card processing system;

providing the alias account's information to the credit card processing system so that the credit card processing system can set up the second alias account;

receiving a credit card application at the credit card processing system from an applicant to setup the primary account in the credit card processing system; and

providing the primary account's information from the credit card processing system to the secure database so that the secure database can setup a second primary account that corresponds to the account in the credit card processing system;

6. The method of Claim 5, further comprising the steps of:

receiving the security stub with a password and a first document tracking number;

receiving the credit card application with a source of credit information and a second document tracking number that corresponds to the first document tracking number on the security stub; and

creating the relationship between the alias account and the primary account based on the first and second document tracking number.

7. The method of Claim 1, further comprising the steps of:

transmitting a message containing account information associated with the alias account and identified by the alias identity from the credit card processing system to the secure database;

receiving the message in the secure database and locating the primary account associated with the alias account;

retrieving the real identity from the primary account associated with the alias account.

substituting the alias identity on the message containing account information with the real identity retrieved from the primary account;

transmitting the message identified with the real identity from the secure database back to the credit processing system for forwarding to the cardholder.

8. The method of Claim 1, further comprising the steps of:

transmitting a message containing account information associated with the alias account and identified by the alias identity from the credit card processing system to a mail distributor;

receiving a message with the alias identity at the mail distributor's facility and identifying the message as a message identified with the alias identity;

accessing a database from the mail distributor's facility and retrieving the real identity from the primary account associated with the alias account.

substituting the alias identity with the real identity retrieved from the primary account; and

transmitting the message identified with the real identity from the mail distributor to the cardholder.

9. The method of Claim 1, further comprising the steps of

creating a first credit line for the primary account on the credit card processing system;

transmitting an indication of the first credit line from the credit card processing system to the secure database;

receiving the indication of the first credit line at the secure database and apportioning the first credit line and assigning a second credit line to the primary account and a third credit line to the alias account; and

transmitting a message reflecting the second credit line back to the credit card processing system to replace the first credit line as a new credit line associated with the primary account.

10. The method of Claim 1, further comprising the steps of:

closing the primary or alias account on the credit card processing system;

transmitting an indication to the secure database that the primary or alias account has been closed;

receiving the indication at the secure database that the primary or alias account has been closed and in response to receiving the indication combining the second primary account and the second alias account into a new account and transmitting the new account to the credit card processing system;

11. A method for managing accounts to accomplishing an anonymous transaction, comprising the steps of:

receiving an application at a processing system that identifies an existing account and based on the application converts the existing account to a primary account that identifies the cardholder with the cardholder's real identity;

receiving a security stub at a secure database containing information to setup an alias account identified with an alias identity and in response to receiving the security stub creating an alias account and providing a request to the processing system to forward the primary account information to create a second primary account that corresponds with the primary account in the processing system;

in response to the processing system receiving the request for the primary account information, the processing system forwards the primary account information to the secure database to create a second primary account that corresponds to the primary account created in the credit card processing system;

in response to receiving the primary account information, the secure database forwards the alias account information to the processing system to create a second alias account that corresponds with the alias account in the secure database;

creating a relationship in the secure database between the alias account and the primary account to carry out the credit card processing functions with the cardholder's real identity only known to the secure database.

12. The method of Claim 11, further comprising the steps of:

creating the relationship between the alias and primary account by constructing a database that associates the second primary account and the alias account created in the secure database.

13. The method of Claim 11, further comprising the steps of:

constructing a first database that contains information for setting up the alias account in the secure database;

constructing a second database containing information for assigning an account number to the alias account setup from information in the first database;

constructing a third database containing information to create a profile for an issuer that is assigned to the alias account constructed from the first database; and

constructing a fourth database that contains information for matching the alias account created from the first database and a second primary account that corresponds to the primary account on the card processing system;

constructing a fifth database containing alias and primary account information for replacing the alias identity with the real identity retrieved from the second primary account.

14. A computer-readable medium containing instructions that, when executed on a computer, perform the method of Claim 13.

15. The method of Claim 11, further comprising the steps of:

transmitting a message containing account information associated with the second alias account and identified by the alias identity from the credit card processing system to the secure database;

receiving the message in the secure database and locating the second primary account associated with the alias account;

retrieving the real identity from the second primary account associated with the alias account.

substituting the alias identity on the message with the real identity retrieved from the second primary account;

transmitting the message identified by the real identity from the secure database back to the credit processing system for forwarding to the cardholder.

16. The method of Claim 11, further comprising the steps of:

transmitting a message containing account information associated with the second alias account and identified with the alias identity from the credit card processing system to a mail distributor;

receiving the message identified with the alias identity at the mail distributor's facility and recognizing the message as a message identified with the alias identity;

access a database from the mail distributor's facility and retrieving the real information associated the second primary account associated with the alias account.

substituting the alias identity on the message with the real identity retrieved from the second primary account; and

transmitting the re-identified message from the mail distributor to the cardholder.

17. The method of Claim 11, further comprising the steps of:

modifying a first credit line associated with the existing account to create a second credit line associated with the primary account on the credit card processing system;

transmitting an indication of the second credit line from the credit card processing system to the secure database;

receiving the indication of the second credit line at the secure database and apportioning the second credit line and assigning a third credit line to the second primary account and a fourth credit line to the alias account; and

transmitting information reflecting the third credit line back to the credit card processing system to replace the first credit line as a new credit line associated with the primary account;

18. The method of Claim 17, wherein the second credit line is apportioned based on a first percentage assigned to the alias account and a second percentage assigned to the second primary account.

19. The method of Claim 11, further comprising the steps of:

closing the primary or second alias account on the credit card processing system;

transmitting an indication to the secure database that the primary or second alias account has been closed;

receiving the indication at the secure database that the primary or second alias account has been closed and in response to receiving the indication combining the second primary account and alias account into a new account and transmitting the new account to the credit card processing system.

20. A system for managing credit card accounts on a credit card processing system to accomplishing an anonymous credit card transaction, comprising:

an alias account for a credit cardholder on the credit card processing system that is associated with a first credit card and identifies the cardholder with an alias identity;

a primary account for the credit cardholder on the credit card processing system that is associated with a second credit card and identifies the cardholder with the cardholder's real identity;

a secure database to create a relationship between the alias account and the primary account to carry out the credit card processing functions with the cardholder's real identity being only known to the secure database.

21. The system of Claim 20, further comprising:

a security stub that is sent to the secure database to setup an alias account in the secure database and a credit card application that is sent to the credit card processing system to setup the primary account on the credit card processing system; and

primary account information generated during the setup of the primary account on the credit card processing system that is transmitted to the secure database to setup a second primary account in the secure database; and

alias account information generated during the setup of the second alias account setup in the secure database that is transmitted to the credit card processing system so that the credit card processing system can set up a second alias account.

22. The system of Claim 21, further comprising:

a password on the security stub to provide identification of the alias account cardholder and a document tracking number on the security stub to identify the security stub;

a credit card application containing credit information for approving the cardholder and a second document tracking number on the credit card application that associates the first document tracking

number on the security stub to the second document tracking number on the credit card application; and

a secure database for creating a relationship between the alias account and the primary account based on the first and second document tracking numbers.

23. The system of Claim 22, wherein the relationship between the alias and primary account is created by constructing a database that correlates the second primary account and the alias account.

24. The system of Claim 20, further comprising:

a message containing account information associated with the second alias account and identified by the alias identity that is transferred from the credit card processing system to the secure database, wherein the secure database:

a) receives the message associated with the second alias account and retrieves the real identity from the second primary account associated with the alias account; and

b) substitutes the alias identity on the message with the real identity retrieved from the second primary account and transmits the account information the from the secure database back to the credit processing system for forwarding the card holder.

25. The system of Claim 20, further comprising:

a message containing account information associated with the second alias account and identified with the alias identity that is transferred from the credit card processing system to a mail distributor;

a system at the mail distributors facility for receiving the message identified with the alias identity at the mail distributors facility and recognizing the message as a message identified with the alias identity;

a database for accessing the real identity associated the second primary account from the system at the mail distributor's facility and using the real identity to re-identify the message and transmit it to the cardholder;

26. The system of Claim 20, further comprising:

a first credit line for the primary account on the credit card processing system;

an indication of the first credit line associated with the primary account that is transmitted from the credit card processing system to the secure database, wherein the secure database:

a) receives the indication of the first credit line and apportions the first credit line, based on a ratio assigned to the alias and primary accounts, to assign a second credit line to the second primary account and a third credit line to the alias account; and

b) transmits the second credit line back to the credit card processing system to replace the first credit line as the credit line associated with the primary account.

27. The system of Claim 20, wherein the primary or alias account on the credit card processing system is closed and an indication is transmitted to the secure database that the primary or alias account has been closed, and in response to receiving the indication the secure database combines the second primary account and alias accounts into a new account and transmits the new account to the credit card processing system;

28. A method for processing an anonymous credit card transaction on a credit card processing system, comprising:

receiving at a credit card processing system a requests for approval of a credit card transaction from a merchant;

providing approval of the credit card transaction and transmitting an authorization to the merchant;

processing the credit card transaction that has been authorized on an alias account that identifies a cardholder with an alias identity;

transmitting the credit card transaction that has been processed on a periodic basis to a secure database to located a primary account associated with the alias account that identifies the cardholder with a real identity;

substituting the credit card transaction's alias identity with the real identity retrieved from the primary account, and transmitting the credit card transaction back to the processing system for forwarding to the cardholder;

29. The method of Claim 28, further comprising the steps of:

receiving a security stub from an applicant and using the security stub to setup an alias account in the secure database that corresponds to a second alias account in the credit card processing system and receives the credit card transaction;

providing the alias account's information to the credit card processing system so that the credit card processing system can set up the second alias account;

receiving a credit card application at the credit card processing system from an applicant to setup a primary account in the credit card processing system; and

providing the primary account's information from the credit card processing system to the secure database so that the secure database can setup a secondary primary account that corresponds to the primary account in the credit card processing system;

30. The method of Claim 29, further comprising the steps of:

receiving the security stub with a password and a first document tracking number;

receiving the credit card application with a source of credit information and a second document tracking number that corresponds to the first document tracking number on the security stub; and

creating a relationship between the alias account and the primary account based on the first and second document tracking number.

31. The method of Claim 29, further comprising the steps of:

constructing a first database that contains information for setting up the second alias account in the secure database;

constructing a second database containing information for assigning an account number to the second alias account setup from information in the first database;

constructing a third database containing information to create a profile for an issuer that is assigned to the second alias account constructed from the first database; and

constructing a fourth database that contains information for matching the second alias account created from the first database and a second primary account that corresponds to the primary account on the card processing system;

constructing a fifth database containing alias and primary account information for replacing the alias identity with real identity retrieved from the second primary account.

32. A computer-readable medium containing instructions that, when executed on a computer, perform the method of Claim 31.

33. The method of Claim 28, further comprising the steps of:

transmitting a message containing account information associated with the alias account and identified with alias identity from the credit card processing system to a mail distributor;

receiving the message with the alias identity at the distributor's facility and recognizing the message as a message identified with the alias identity;

accessing a database from the mail distributor's facility and retrieving a real identity from the primary account associated with the alias account.

substituting the alias identity with the real identity retrieved from the primary account; and

transmitting the message identified with the real identity from the distributor to the cardholder.

34. The method of Claim 28, further comprising the steps of:

creating a first credit line for a primary account on the credit card processing system;

transmitting an indication of the first credit line from the credit card processing system to the secure database;

receiving the indication of the first credit line at the secure database and apportioning the first credit line and assigning a

second credit line to the primary account and a third credit line to the alias account in the secure database; and

transmitting information reflecting the second credit line back to the credit card processing system to replace the first credit line as the credit line associated with the primary account.

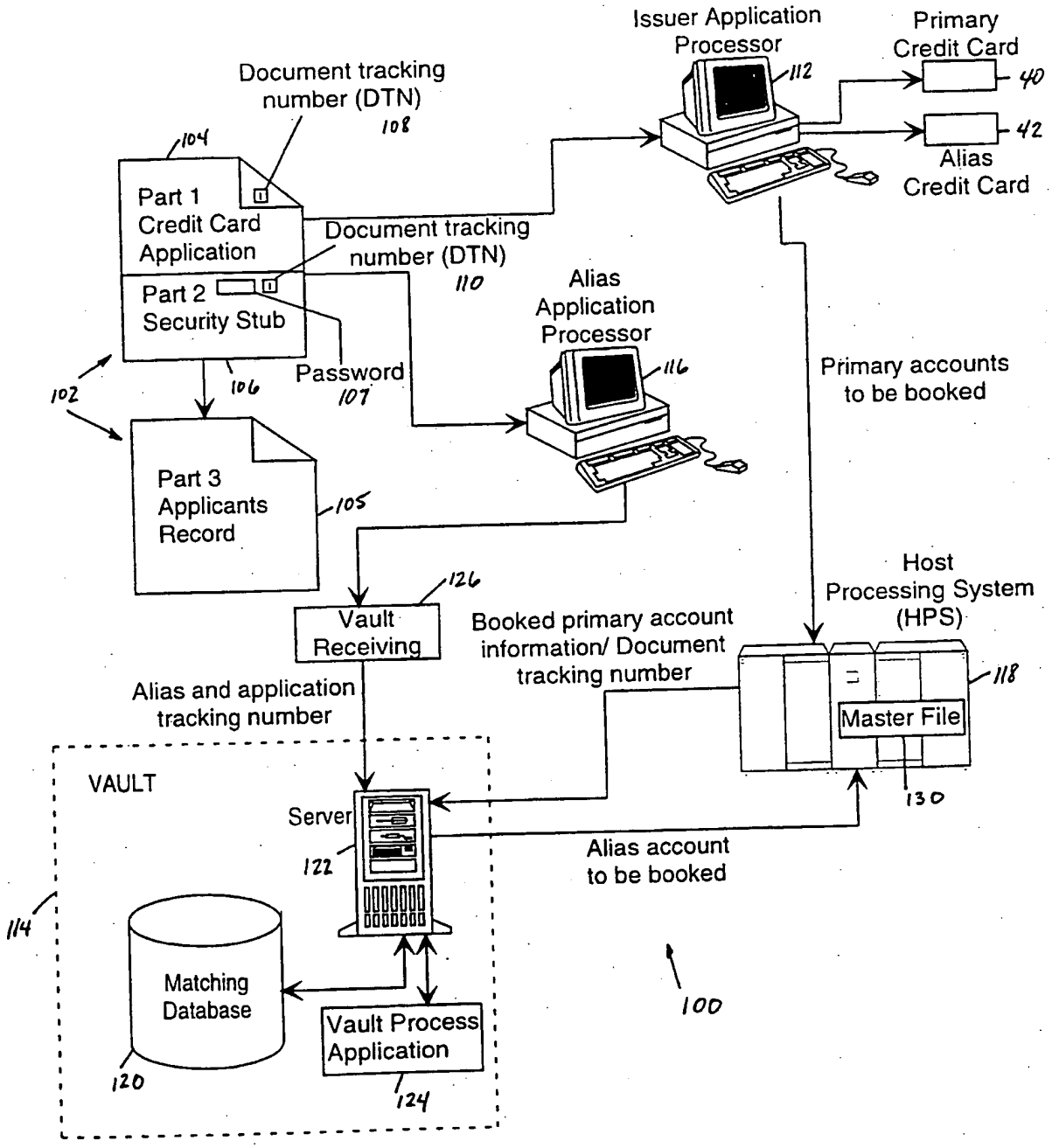

Issuer Application Processor
112
Primary Credit Card
40
42
Alias Credit Card
Document tracking number (DTN)
108
104
Part 1 Credit Card Application
Part 2 Security Stub
Document tracking number (DTN)
110
Alias Application Processor
116
Password
107
106
102
Primary accounts to be booked
Part 3 Applicants Record
105
126
Vault Receiving
Booked primary account information/ Document tracking number
Host Processing System (HPS)
118
Master File
130
Alias and application tracking number
VAULT
Server
122
Alias account to be booked
114
Matching Database
120
Vault Process Application
124
100

Fig. 1

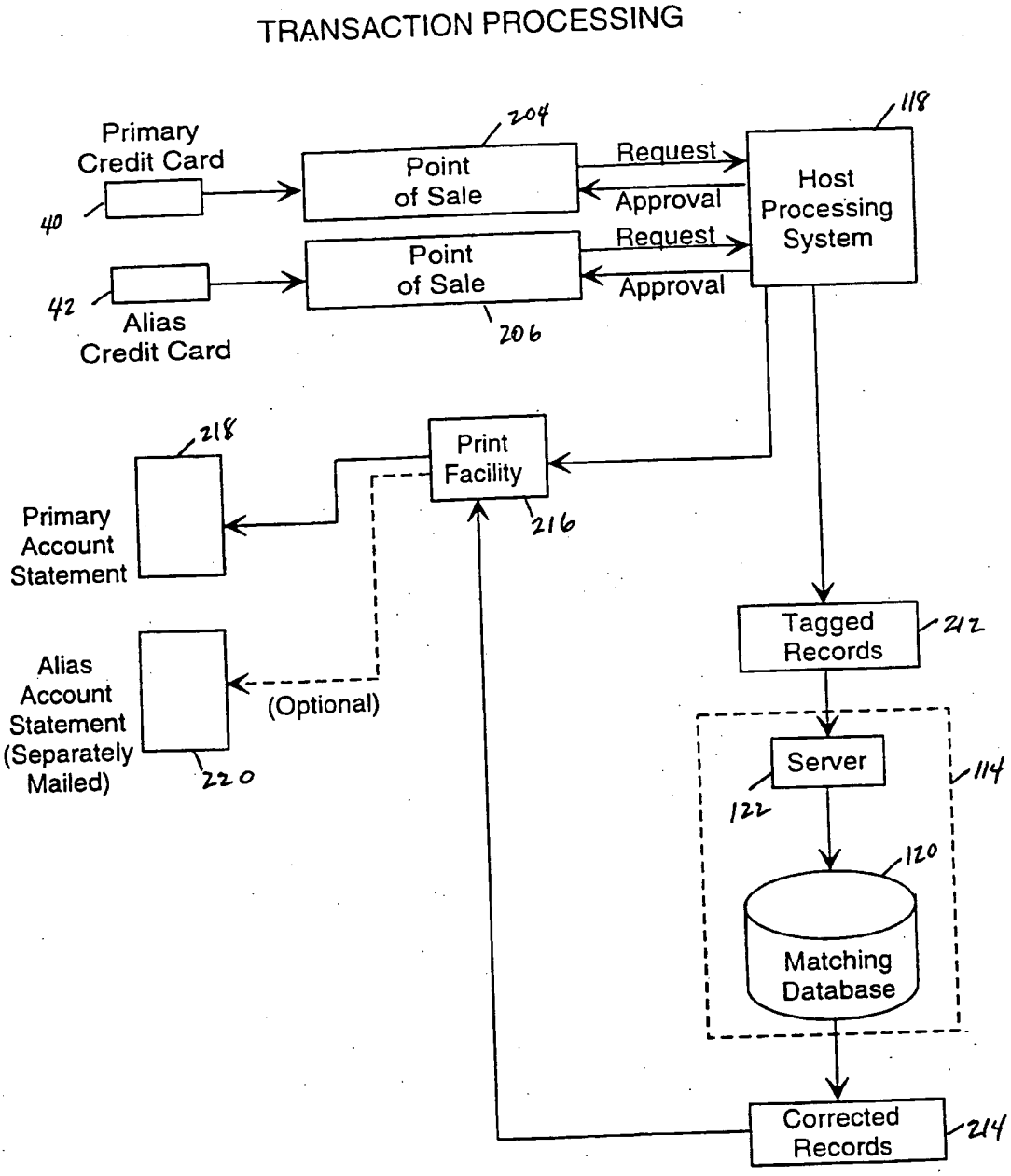

TRANSACTION PROCESSING
Primary Credit Card
40
Alias Credit Card
42
Point of Sale
204
Point of Sale
206
Request
Approval
Request
Approval
Host Processing System
118
Print Facility
216
218
Primary Account Statement
Alias Account Statement (Separately Mailed)
220
(Optional)
Tagged Records
212
Server
122
114
120
Matching Database
Corrected Records
214

Fig. 2

EXISTING ACCOUNT UPGRADE TO A PRIMARY AND ALIAS ACCOUNT

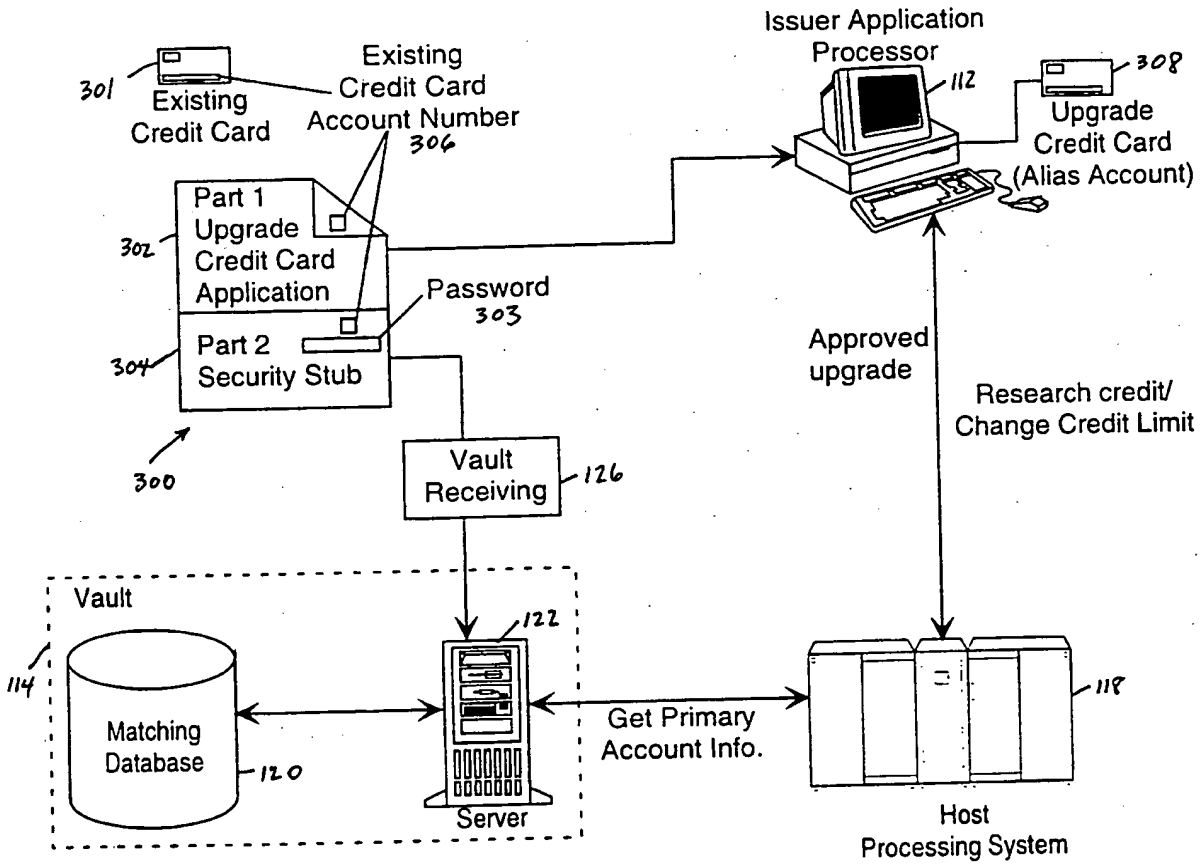
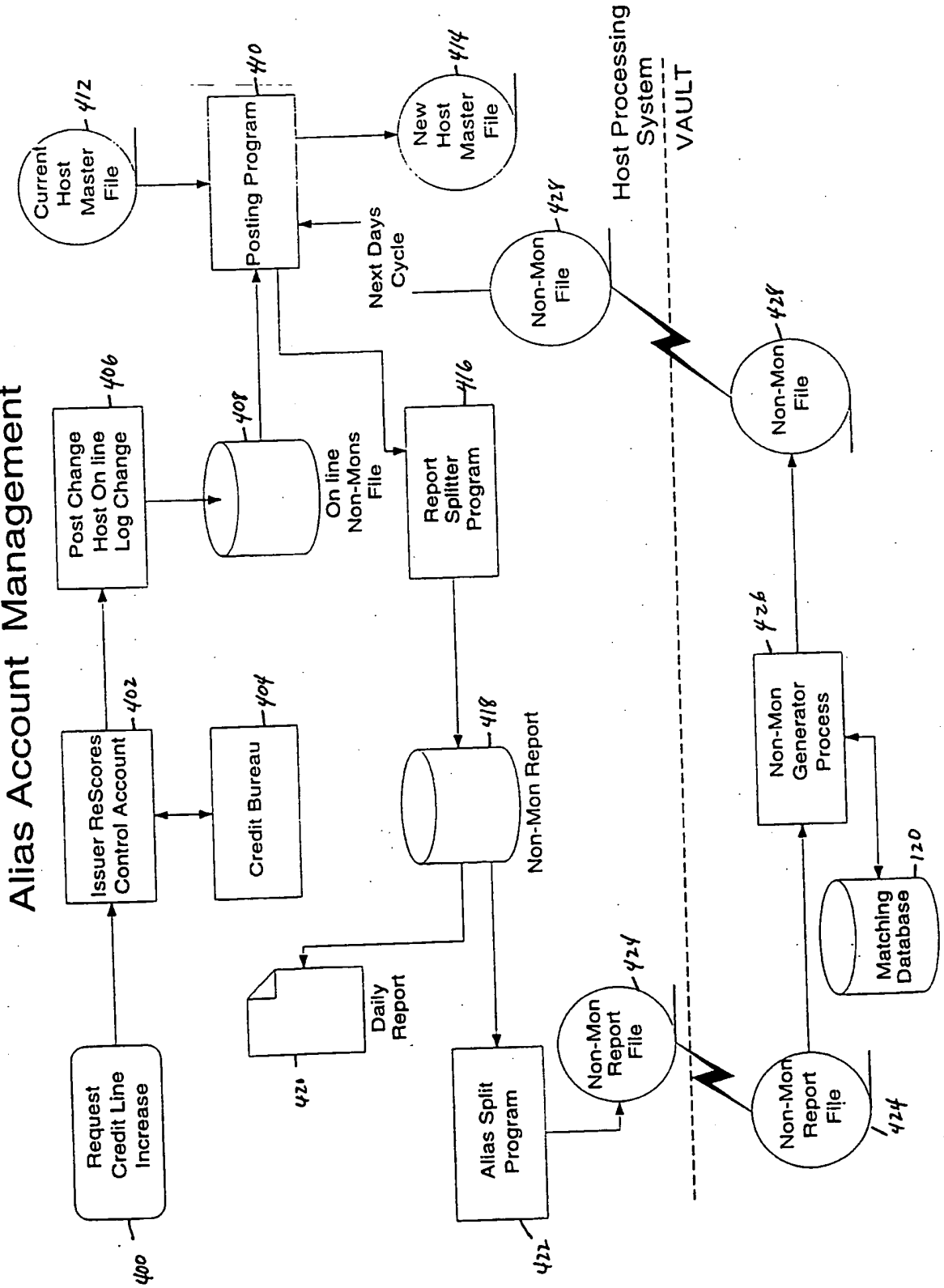


Fig. 3

Fig. 4


Alias Account Management
Request Credit Line Increase
400
Issuer ReScores Control Account
402
Credit Bureau
404
Post Change Host On line Log Change
406
On line Non-Mons File
408
Current Host Master File
412
Posting Program
410
New Host Master File
414
Next Days Cycle
Report Splitter Program
416
Non-Mon Report
418
Daily Report
421
Alias Split Program
422
Non-Mon Report File
424
Non-Mon File
427
Host Processing System
VAULT
Non-Mon File
428
Non-Mon Generator Process
426
Matching Database
120
Non-Mon Report File
424

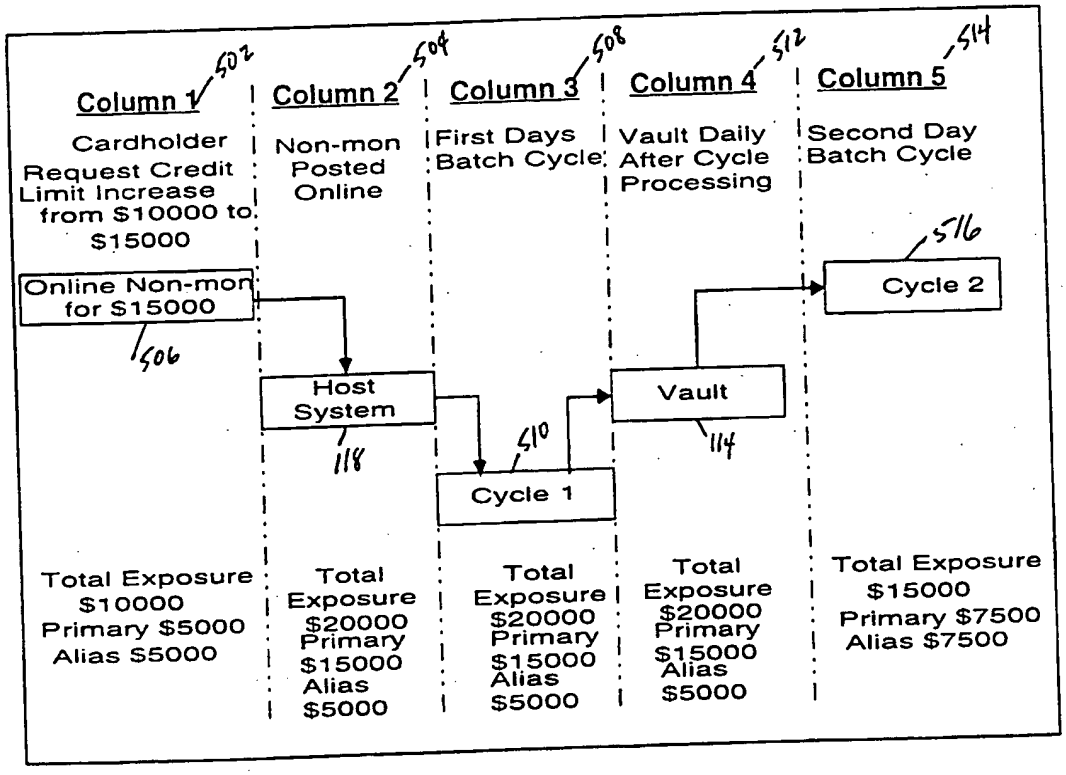

Column 1
502
Cardholder Request Credit Limit Increase from $10000 to $15000
Online Non-mon for $15000
506
Total Exposure $10000 Primary $5000 Alias $5000
Column 2
504
Non-mon Posted Online
Host System
118
Total Exposure $20000 Primary $15000 Alias $5000
Column 3
508
First Days Batch Cycle
510
Cycle 1
Total Exposure $20000 Primary $15000 Alias $5000
Column 4
512
Vault Daily After Cycle Processing
Vault
114
Total Exposure $20000 Primary $15000 Alias $5000
Column 5
514
Second Day Batch Cycle
516
Cycle 2
Total Exposure $15000 Primary $7500 Alias $7500

Fig. 5

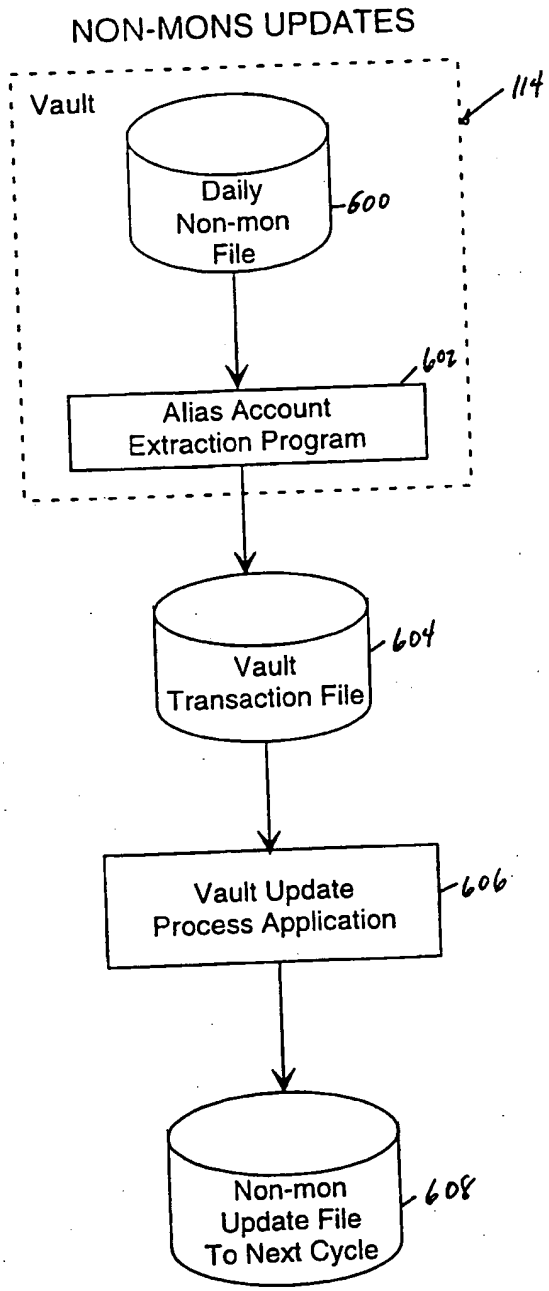

NON-MONS UPDATES
Vault
114
Daily
Non-mon
File
600
602
Alias Account
Extraction Program
Vault
Transaction File
604
Vault Update
Process Application
606
Non-mon
Update File
To Next Cycle
608

Fig. 6

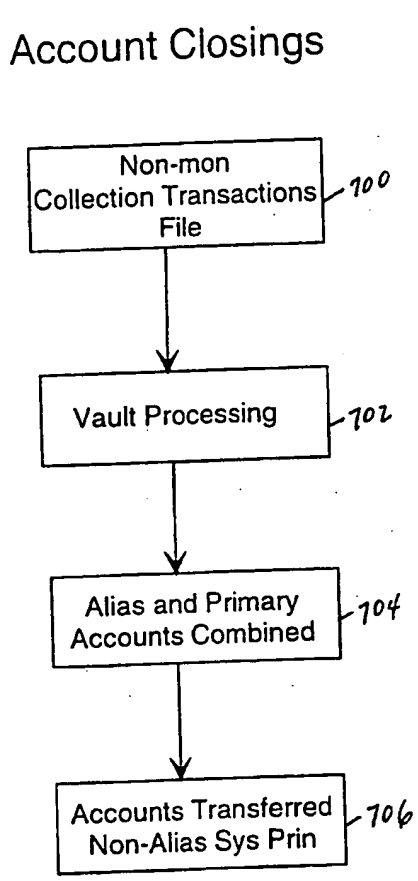

Account Closings
Non-mon Collection Transactions File
700
Vault Processing
702
Alias and Primary Accounts Combined
704
Accounts Transferred Non-Alias Sys Prin
706

Fig. 7

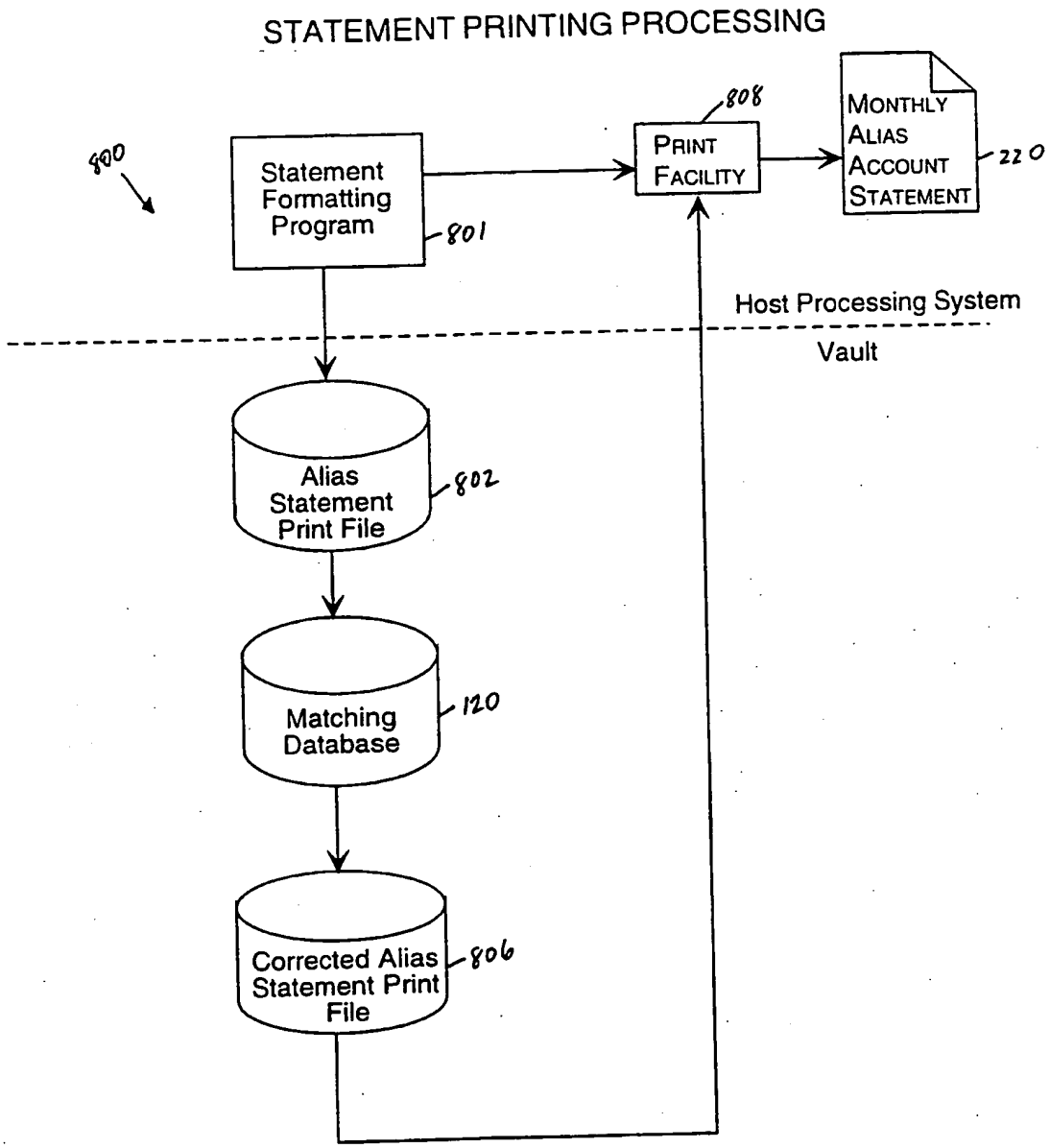
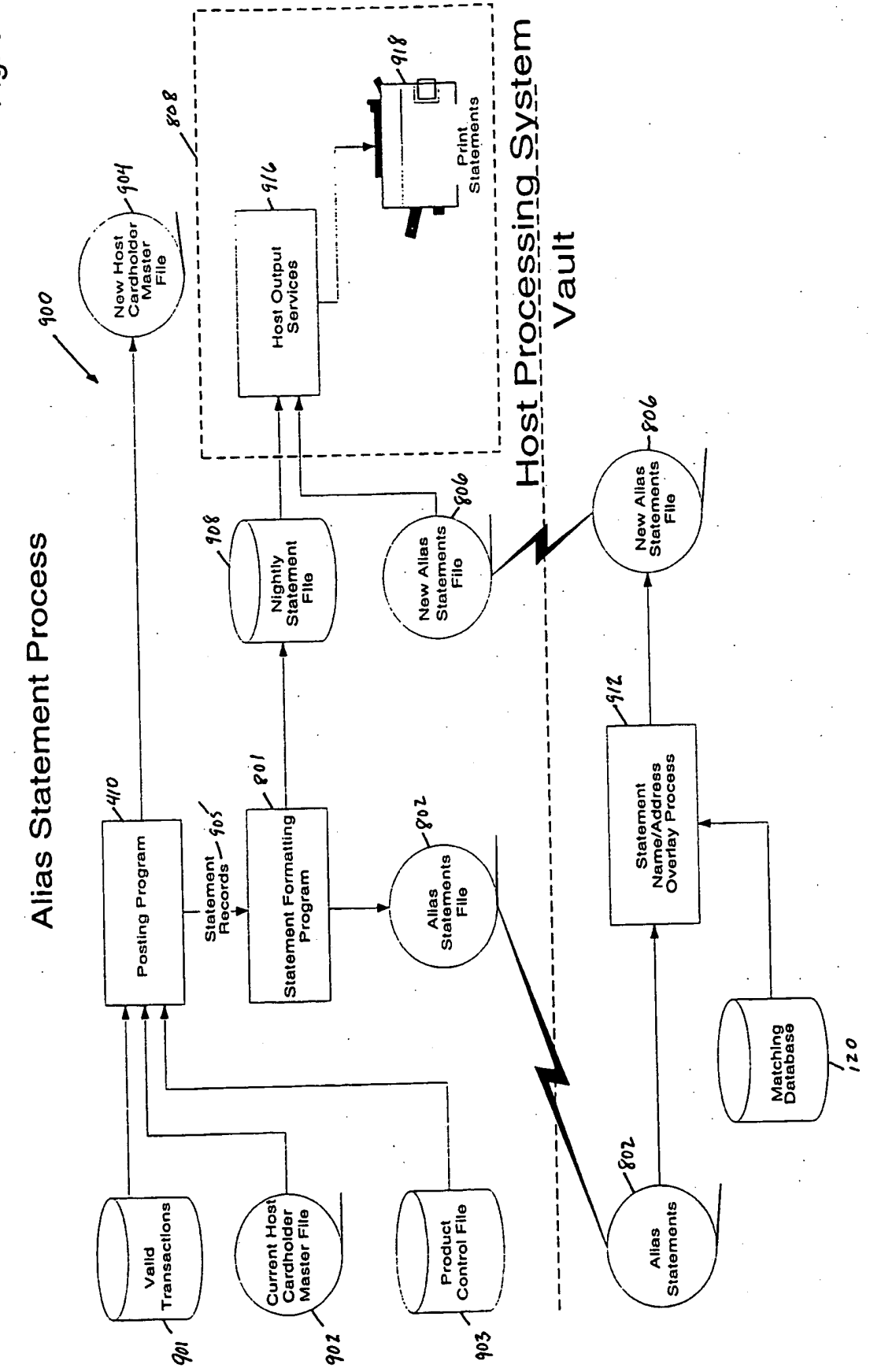

STATEMENT PRINTING PROCESSING
800
Statement Formatting Program
801
808
PRINT FACILITY
MONTHLY ALIAS ACCOUNT STATEMENT
220
Host Processing System
Vault
Alias Statement Print File
802
Matching Database
120
Corrected Alias Statement Print File
806

Fig. 8

Fig. 9


Alias Statement Process
Host Processing System
Vault
900
New Host Cardholder Master File
904
808
Host Output Services
916
Print Statements
918
Nightly Statement File
908
New Alias Statements File
906
New Alias Statements File
906
Posting Program
410
Statement Records
905
Statement Formatting Program
901
Alias Statements File
902
Statement Name/Address Overlay Process
912
Valid Transactions
901
Current Host Cardholder Master File
902
Product Control File
903
Alias Statements
802
Matching Database
120

VAULT DATABASE

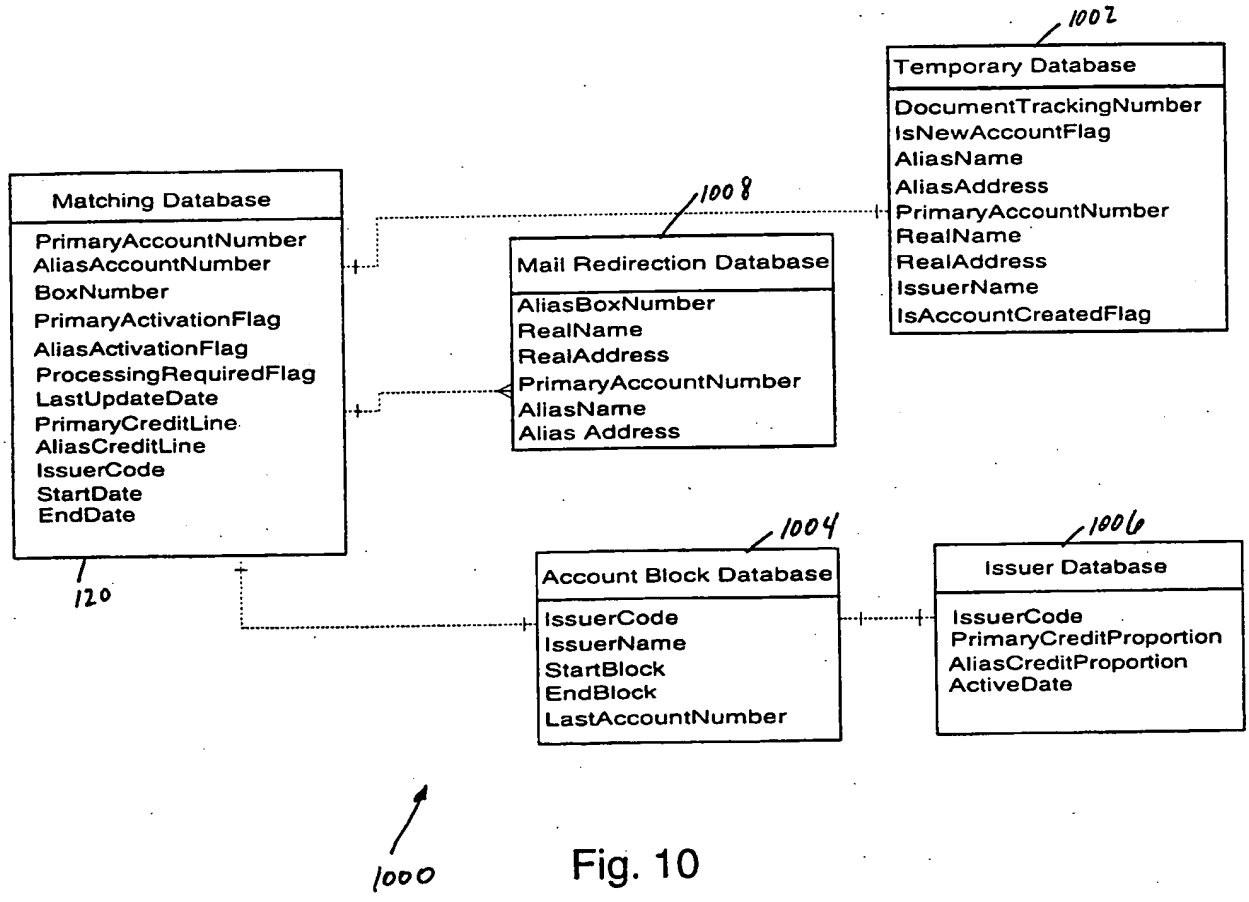
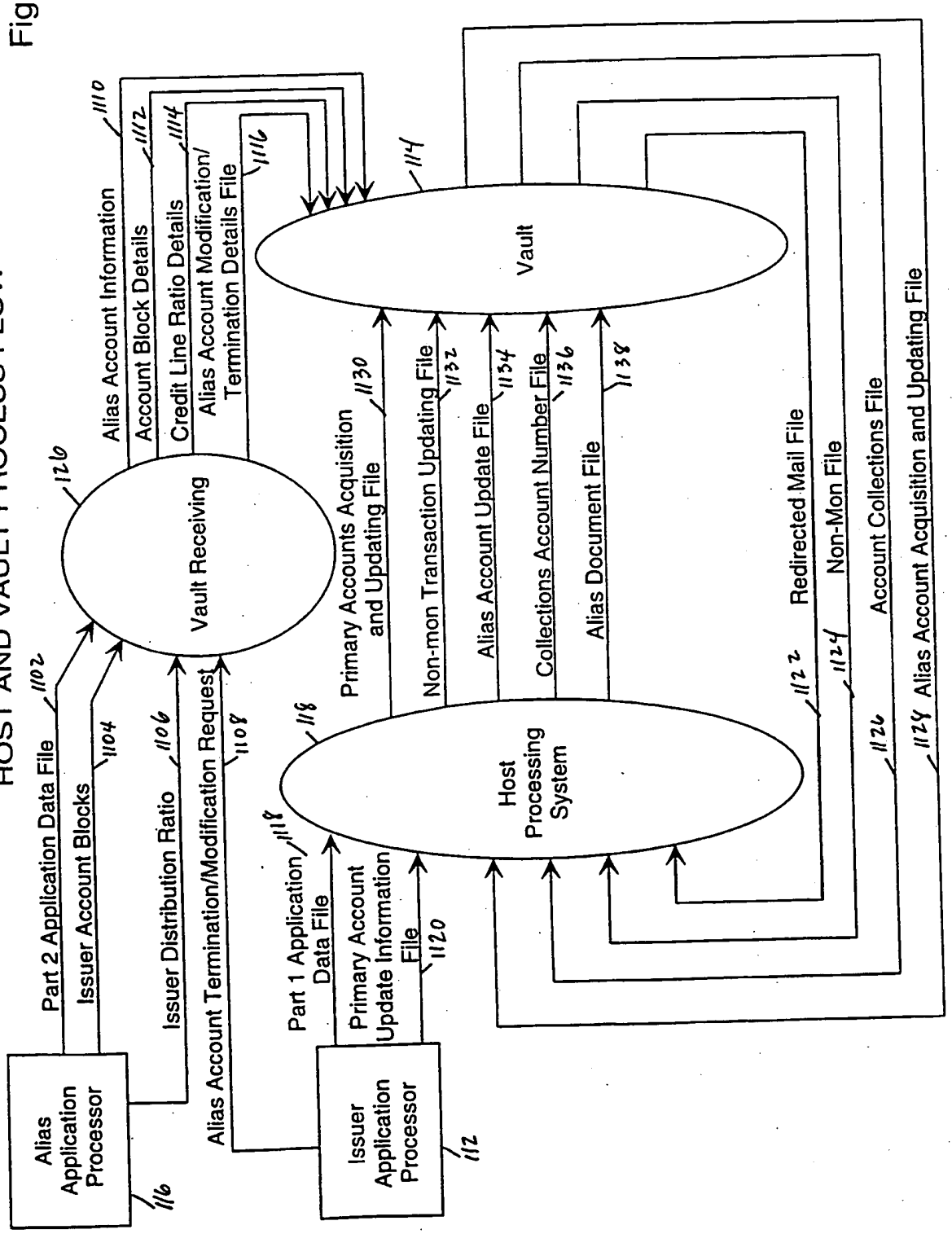


Fig. 10

Fig. 11


HOST AND VAULT PROCESS FLOW
Alias Application Processor
1116
Issuer Application Processor
112
Vault Receiving
1126
Host Processing System
118
Vault
114
Part 2 Application Data File
1102
Issuer Account Blocks
1104
Issuer Distribution Ratio
1106
Alias Account Termination/Modification Request
1108
Part 1 Application Data File
1118
Primary Account Update Information File
1120
Alias Account Information
1110
Account Block Details
1112
Credit Line Ratio Details
1114
Alias Account Modification/ Termination Details File
1116
Primary Accounts Acquisition and Updating File
1130
Non-mon Transaction Updating File
1132
Alias Account Update File
1134
Collections Account Number File
1136
Alias Document File
1138
Redirected Mail File
1122
Non-Mon File
1124
Account Collections File
1126
Alias Account Acquisition and Updating File
1124

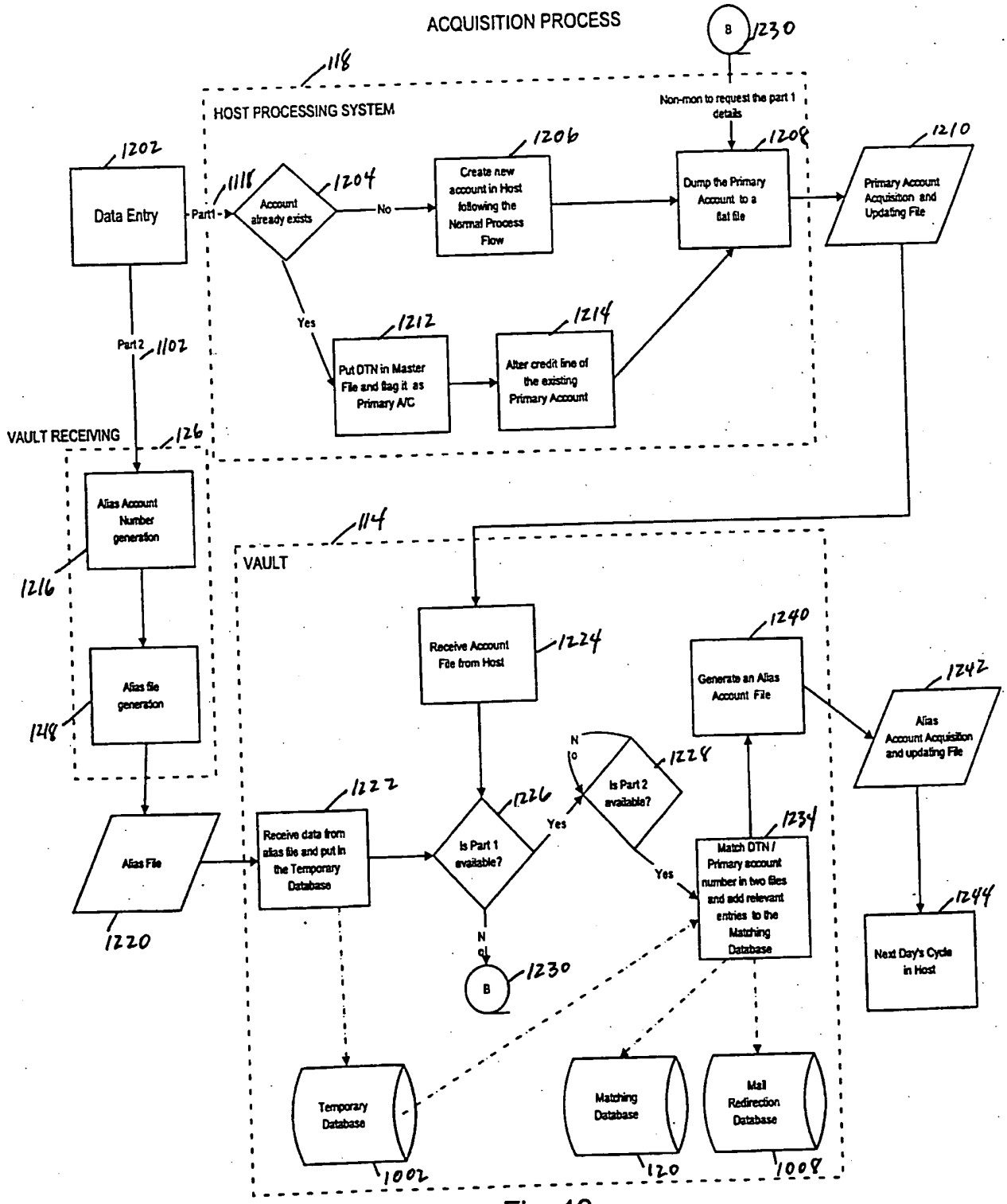

ACQUISITION PROCESS
8
1230
118
HOST PROCESSING SYSTEM
Non-mon to request the part 1 details
1202
Data Entry
Part1
1118
Account already exists
1204
No
Create new account in Host following the Normal Process Flow
1206
Dump the Primary Account to a flat file
1208
Primary Account Acquisition and Updating File
1210
Yes
1212
Put OTN in Master File and flag it as Primary A/C
1214
Alter credit line of the existing Primary Account
Part2
1102
VAULT RECEIVING
126
Alias Account Number generation
1216
Alias file generation
1218
Alias File
1220
114
VAULT
Receive Account File from Host
1224
1240
Generate an Alias Account File
1242
Alias Account Acquisition and updating File
No
1228
Is Part 2 available?
Yes
1222
Receive data from alias file and put in the Temporary Database
1226
Is Part 1 available?
Yes
No
1234
Match OTN / Primary account number in two files and add relevant entries to the Matching Database
1244
Next Day's Cycle in Host
B
1230
Temporary Database
1002
Matching Database
120
Mail Redirection Database
1008
1200

Fig. 12

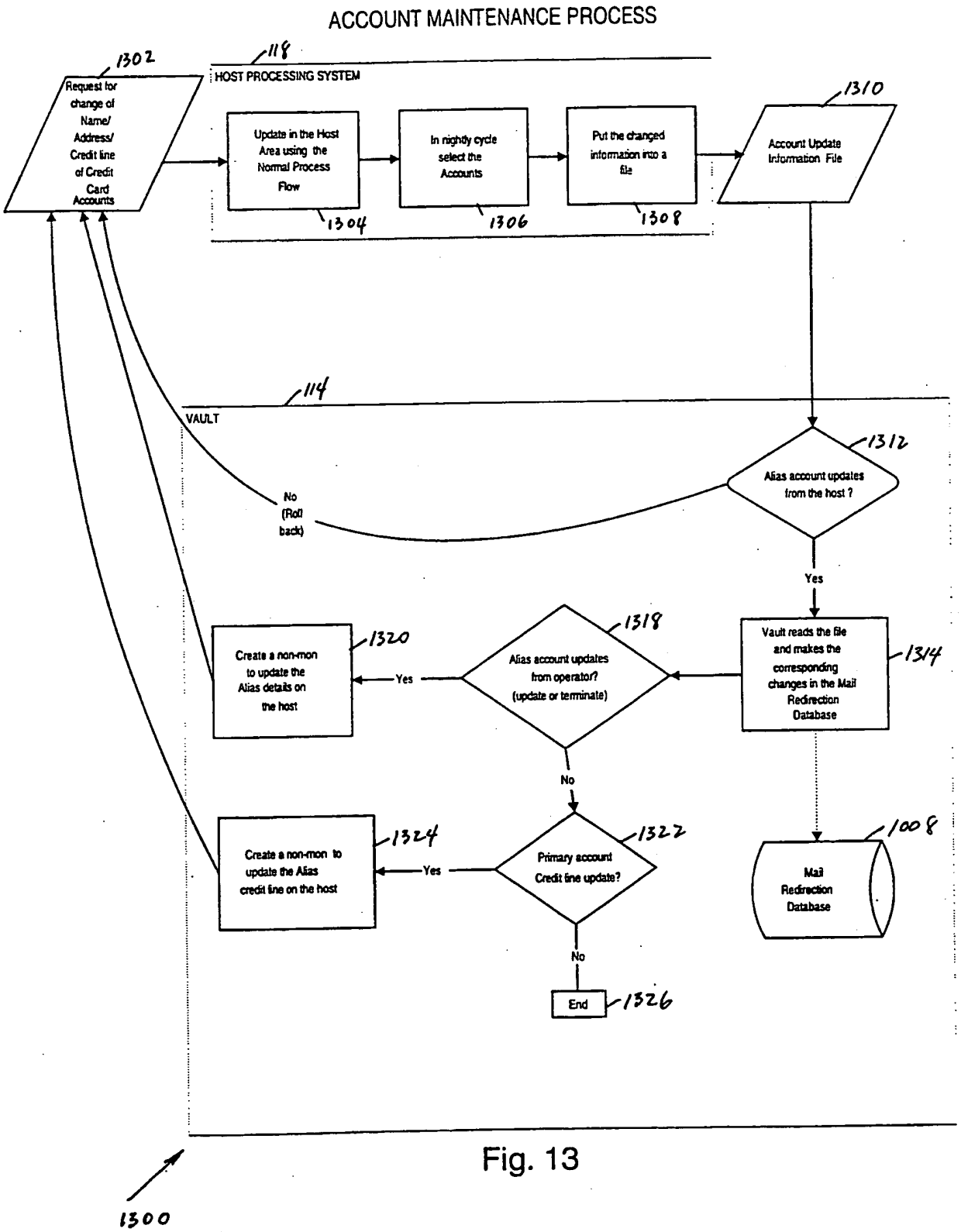

ACCOUNT MAINTENANCE PROCESS
1302
Request for change of Name/ Address/ Credit line of Credit Card Accounts
118
HOST PROCESSING SYSTEM
Update in the Host Area using the Normal Process Flow
1304
In nightly cycle select the Accounts
1306
Put the changed information into a file
1308
1310
Account Update Information File
114
VAULT
1312
Alias account updates from the host ?
No (Roll back)
Yes
Vault reads the file and makes the corresponding changes in the Mail Redirection Database
1314
1318
Alias account updates from operator? (update or terminate)
Yes
Create a non-mon to update the Alias details on the host
1320
No
1322
Primary account Credit line update?
Yes
Create a non-mon to update the Alias credit line on the host
1324
No
End
1326
1008
Mail Redirection Database
1300

Fig. 13

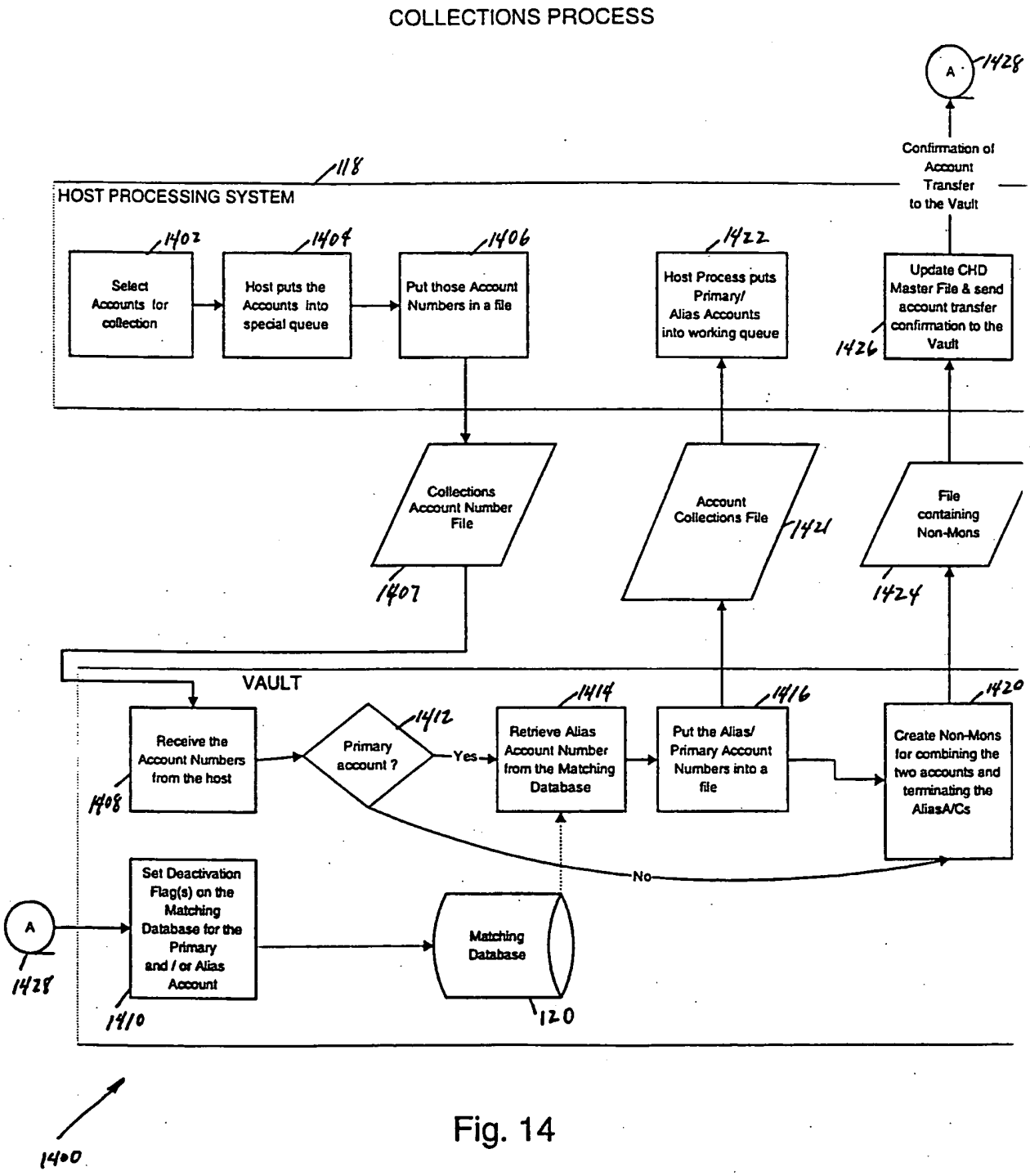

COLLECTIONS PROCESS
A
1428
Confirmation of Account Transfer to the Vault
118
HOST PROCESSING SYSTEM
1402
Select Accounts for collection
1404
Host puts the Accounts into special queue
1406
Put those Account Numbers in a file
1422
Host Process puts Primary/ Alias Accounts into working queue
Update CHD Master File & send account transfer confirmation to the Vault
1426
Collections Account Number File
1407
Account Collections File
1421
File containing Non-Mons
1424
VAULT
Receive the Account Numbers from the host
1408
Primary account ?
1412
Yes
No
1414
Retrieve Alias Account Number from the Matching Database
1416
Put the Alias/ Primary Account Numbers into a file
1420
Create Non-Mons for combining the two accounts and terminating the AliasA/Cs
A
1428
Set Deactivation Flag(s) on the Matching Database for the Primary and / or Alias Account
1410
Matching Database
120
1400

Fig. 14

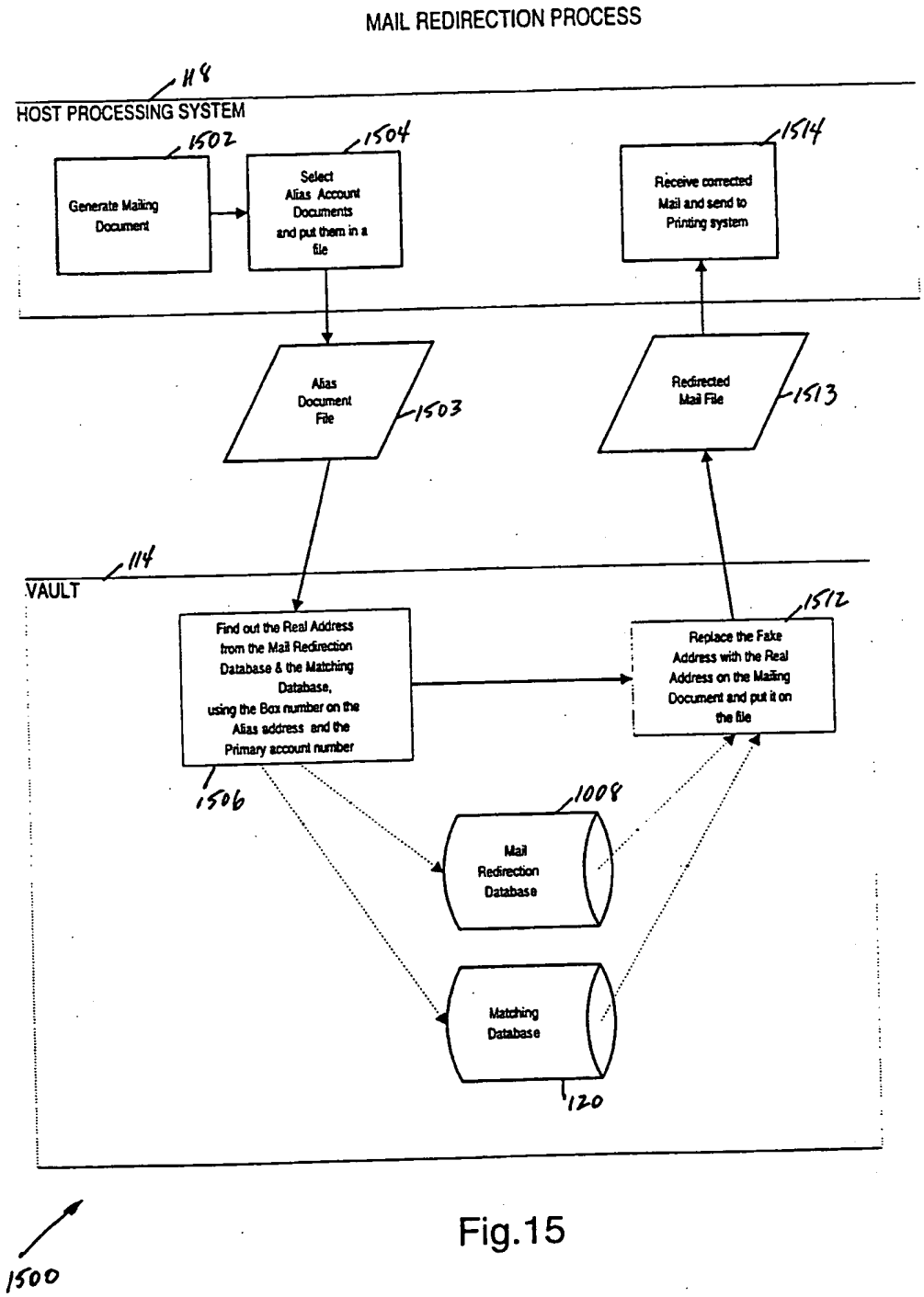

MAIL REDIRECTION PROCESS
118
HOST PROCESSING SYSTEM
1502
Generate Mailing Document
1504
Select Alias Account Documents and put them in a file
1514
Receive corrected Mail and send to Printing system
Alias Document File
1503
Redirected Mail File
1513
114
VAULT
Find out the Real Address from the Mail Redirection Database & the Matching Database, using the Box number on the Alias address and the Primary account number
1506
1512
Replace the Fake Address with the Real Address on the Mailing Document and put it on the file
1008
Mail Redirection Database
Matching Database
120
1500

Fig.15

INTERNATIONAL SEARCH REPORT

Interna .ial Application No
PCT/US 00/30675

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G07F7/10 G07F7/02 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G07F G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 00 63855 A (BARTON PETER R) 26 October 2000 (2000-10-26) the whole document ---	1-34
P,X	WO 00 65517 A (HERTZ ELI E) 2 November 2000 (2000-11-02) abstract page 2, paragraph 4 -page 3, paragraph 1 page 4, paragraph 2 page 5, paragraph 3 -page 8, paragraph 2 ---	1-34
P,X	WO 00 14648 A (IMPOWER INC) 16 March 2000 (2000-03-16) abstract page 2, line 19 -page 4, line 2 figure 1 --- -/--	1-34

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 April 2001	11/04/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Van Dop, E

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INTERNATIONAL SEARCH REPORT

Interna .ial Application No
PCT/US 00/30675

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 953 710 A (FLEMING STEPHEN S) 14 September 1999 (1999-09-14) abstract column 6, line 7 - line 47 column 7, line 47 -column 8, line 7	1-34
A	EP 0 590 861 A (AMERICAN TELEPHONE & TELEGRAPH) 6 April 1994 (1994-04-06) abstract	1-34

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern. ..al Application No
PCT/US 00/30675

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